BANCA NAZIONALE DEL LAVORO

QUARTERLY REVIEW

ROME

BANCA NAZIONALE DEL LAVORO
QUARTERLY REVIEW

No. 51 December 1959

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Tax and Credit Aids to Industrial Development in Southern Italy(*)

I. Introduction

The South of Italy has long been characterized by a low level of per capita income — extremely low in comparison with Western Europe generally and considerably lower than the average for Italy as a whole. Students of " the problem of the South " have usually concluded that any comprehensive and permanent solution must involve a sustained and rapid industrialization of this region. Improvements in agricultural income are sorely needed and can be achieved; progress in this direction is being made. Nevertheless, the large population and the limited resources of soil and climate appear to make industrialization a necessary ingredient of any true solution.

Whether correct or not, this conclusion is embodied in Italian economic policy. Since 1947, a number of steps have been taken designed to encourage industrial development in the South (1). These include but are not limited to the special measures in the fields of taxes and credit which form the subject of this paper. In addition to these " agevolazioni " (facilitations, special aids), other policies have been undertaken, with which we are not here concerned but which may be equally important — or even more important — for industrial development. These policies include particularly the large expenditures being made on the provision of " social capital " — roads and streets, water supply and sewage dis-

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(*) Financial assistance for this study came from the Economics Faculty Research Fund of the University of Michigan, established by a grant from the Ford Foundation.

(1) For a general discussion, see Friedrich Vöchting, " Considerations on the industrialization of the Mezzogiorno ", this *Review*, No. 46 (Sept., 1958), pp. 325-376.

posal systems, flood control, improved rail and terminal facilities, and improved availability of gas and electricity. In addition to a general improvement of social capital throughout the South, special provisions have been made for the intensive preparation of " industrial zones ", including the assembly of land, and the provision of special transportation facilities and other public utilities, in limited zones particularly well-suited for plant location. Such industrial zones or " estates " are a common feature of many regional development programs in other countries. Special training programs to improve the supply of skilled labor have also been established, and expanded programs are now being planned. Such measures as these attempt to provide a general encouragement for the location of industrial plants in the South, by approximating in the South some of the " external economies " that the growth and localization of industry have already created in the North.

Other parts of the program should stimulate Southern industrialization by improving the local markets for industrial producers in the South. For example, a certain fraction of public procurement is reserved to Southern suppliers. Southern markets are also strengthened by the program of investment in social capital, which directly stimulates local suppliers of building materials, and, by at least temporarily raising Southern incomes, improves the market for locally-produced consumers goods. Further, of course, the programs designed to raise agricultural efficiency and agricultural income, while not having this as their principal aim, also should enlarge local markets for Southern producers of agricultural supplies and consumers goods (2). Efforts to develop the tourist industry in the South also indirectly improve markets for local industry.

One of the boldest programs for Southern industrialization is a requirement contained in the law of July 1957 (see below) that the state controlled enterprises should, in the years 1958 through 1963, make at least 60% of their gross investments and 40% of

(2) The agricultural program includes large new irrigation and flood control works; reforestation; agricultural extension services (development of and education in better methods of cultivation, improved varieties of livestock, trees and seeds, new crops, etc.); special credit facilities for purchase of machinery and for land improvements; expropriation and sale to small proprietors of large estates capable of intensive cultivation but now cultivated extensively; development of marketing and purchasing cooperatives; provision of improved facilities for collection, packing, and shipment of agricultural products; etc.

their net investments in the South. Since these enterprises include a large fraction of Italian heavy industry, the impact of this program should be extremely large. Its effect on private investment in the South may in part be discouraging, by providing new local competition for existing Southern firms; however, it is expected that its impact will, on balance, be favorable to private investment as well, by creating a new market for local suppliers to these large enterprises; by providing Southern producers some materials at lower cost; by developing the "external economies" of larger labor pools, etc.; and, through its effect on incomes, improving local consumer demand. Similar effects should be felt from the new integrated steel mill planned for the South.

Finally, an ambitious new educational program of the government (a national program, but one whose impact will be greatest in the South), designed to guarantee free elementary and secondary education, may in the long run provide the greatest stimulus of all to economic development in the South.

Our modest purpose here is not to evaluate the whole program for industrialization, but rather only one small part of it, the special aids in the fields of taxation and credit: the "agevolazioni". The other programs described above contribute in a general way to the improvement of the environment for private industrial development in the South. The agevolazioni, by contrast, attempt to provide rather specific additional profit incentives in favor of Southern as opposed to Northern industrial investment.

After a brief description of these provisions in part II, and a general analysis of their effects, we attempt in part III, through a series of hypothetical but, we hope, not too unrealistic examples, to assess their quantitative importance and to understand to what extent they affect the profit margins on potential Southern investment. We are concerned not only with their combined importance, but likewise attempt to discover which of these provisions appear to be individually more important, and under what circumstances; and which are less important or trivial.

Although what we propose to do is rather elementary, it does not appear that this kind of evaluation has previously been undertaken. Presumably, some entrepreneurs considering the possibility of investment in the South have made individual calculations similar to ours, but they have not, of course, published them.

II. The "Agevolazioni"

We summarize below, under ten headings, the present (October 1959) status of the "agevolazioni". The origin of the agevolazioni is found in a series of laws which were passed between 1947 and 1953 (3). A notable extension occurred in July 1957 (4), and further important liberalizations in July 1959 (5). During some of the period of the evolution of this legislation, substantial differences existed between provisions applicable generally to Southern Italy and more generous ones applicable only in the semi-autonomous region of Sicily (6). At present these differences are not of sufficient importance that we need consider them. That is, the general legislation has now largely "caught up" with the leadership provided in Sicily.

Before describing and analyzing the particular provisions, we should first note that the territory to which they apply consists of the regions of Abruzzi and Molise, Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia, the southern part of Lazio and small fringe areas in the Marches. Roughly, it consists of the mainland territory south of a line drawn across the peninsula perpendicular to the coastlines and slightly below Rome, plus the Southern islands.

A second general point is that these provisions apply to new private investment in establishments having machinery or fixed apparatus and set up to manufacture, convert or process raw materials or semi-manufactures, or to produce services. Not only wholly new establishments are covered, but most agevolazioni also apply to reopenings, enlargements, conversions, reconstructions, or removals to Southern Italy of previously existing establishments. (In general, however, it appears that the administration of the provisions has been more favorable to completely new investments than to enlargements of existing enterprises). The owners of these establishments may be persons or corporations resident in the South, elsewhere in Italy, or abroad. Third, it should be noted that we

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(3) DLCPS No. 1598 of December 14, 1947; Law No. 1482 of December 29, 1948; Law No. 298 of April 11, 1953.

(4) Law No. 634 of July 29, 1957.

(5) Laws No. 555 of July 18, 1959, and No. 623 of July 30, 1959.

(6) Regional Law (Sicily) No. 29 of March 20, 1950, Regional Law No. 61 of December 7, 1953, and Regional Law No. 51 of August 5, 1957.

describe a few provisions which are not considered in our examples; they are here listed only for completeness. On the other hand we do not even list a few that are of obviously minor importance.

1. *Reduction of registration fees and mortgage taxes* on deeds relating to the first transfer of ownership of land and buildings required for the new or additional investment. A purely nominal charge of Lit. 200 is substituted for the normal total rate of 7 to 7.5% of the value of the land and buildings. In 1957 the exemption from registration fees was extended to the "atti costituitivi" (articles of incorporation) of new companies, the registration of capital increases, bond issues or bank loans and the mortgages connected therewith (normally 5% of the loan), and conversions of enterprises registered and operating in the South.

2. *Exemption from payment of customs duties* on imports of machinery and building materials for new or expanded plants. The customs duties on industrial machinery, including the "imposta di conguaglio" (equalization tax) and "diritto amministrativo" (administrative charge), range from 11% to 32%. There is a considerable clustering in the range 20% to 26%. We use in our calculations a probably conservative average of 22%.

3. *Reduction by 50% of the I.G.E. (turnover tax)* on machinery, building materials and other goods required for new or additional investment in the South. The normal rate of 3% is thus reduced to 1.5%.

4. *Reductions of freight rates* of up to 50% for the transportation of machinery, materials, and supplies for the construction or expansion of plant and equipment, or their removal to Southern Italy.

5. *Direct investment subsidies ("contributi")* may be granted by the Cassa per il Mezzogiorno to new or expanded small and medium-sized enterprises (7) located in communities in the South in which population is less than 200,000 and in which there is a deficiency of industrial activity. The sum of subsidies plus loans

(7) Small and medium-sized enterprises are now defined as those employing 500 or fewer workers, with total invested capital up to Lit. 3,000 million.

at special rates (below) cannot exceed 85% of the cost of the investment. These subsidies consist of:

(a) Up to 20% of the cost of buildings and of works necessary to connect them with roads and railways, water supply, sewers, electricity and gas, etc.

(b) Up to 20% of the cost of acquisition and installation of machinery, where advantage is not taken of the exemption from customs duties. (Until August 1959 the subsidy on machinery was 10%).

6. *Exemption from income tax* (" Imposta di Ricchezza Mobile "), of up to 50% of profits declared by enterprises and invested in new and additional facilities in Southern Italy. This exemption is available for up to 50% of the cost of the new or additional investment. Since the central government income tax rate on profits is normally 18% (see below) investment in the South may include " free " capital to the extent to 9% of the amount invested, when it is made by a profitable Italian enterprise.

7. *Medium term loans at special interest rates* for up to 70% of the cost of new investment by small and medium-sized enterprises are available through three special credit institutes: Istituto per lo sviluppo economico dell'Italia meridionale (" I.S.V.E.I.MER. "), Istituto regionale per il finanziamento alle industrie in Sicilia (" I.R.F.S. "), and Credito industriale Sardo (" C.I.S. "), serving the southern mainland, Sicily, and Sardinia, respectively. Interest rate subsidies to other lending institutions (e.g., northern banks) are also available for the same purpose.

(a) Until August 1959, such loans were at a rate of 5.5%, in a maximum amount of Lit. 300 million, and for a duration of up to 10 years.

(b) Through special provision by the Regional Government, such loans in Sicily carried a rate of 4%.

(c) For loans for which application is made during the period August 1959-June 1961, the interest rate has been reduced to 3%, the maximum loan raised to Lit. 1,000 million (Lit. 1,500 million in special cases), and the maximum duration increased to 15 years.

8. *Working capital loans* on favorable terms are available as follows:

(a) Through the Industrial Credit Sections of the Banco di Sicilia and the Banco di Napoli, but in limited amounts.

(b) Through I.R.F.I.S. in Sicily at 4% for durations up to 5 years.

(c) For the period August 1959-June 1961, the loans specified under 7c may include up to one-fifth of the cost of necessary inventories.

9. *Participation of the Sicilian Regional Administration in the equity capital* of enterprises, up to a limit of 25%, through the "Società Finanziaria per Azioni", where these enterprises may make significant contribution to the development of natural resources or the employment of surplus labor.

10. *Exemption from income tax* of profits earned on the new investment, for a period of 10 years. As noted above, the normal central government rate has been 18% until July 1, 1959. (Minor changes effective subsequent to this date have been ignored). Exemptions from local and municipal taxes, either full or partial, may be granted by local governments for new or expanded enterprises. There are several varieties of such taxes, both direct and indirect. The only one which we consider in our analysis is the 3.5% "Imposta sulle industrie", which is a local surtax based on the general income tax.

It can easily be seen that these provisions fall into three general groups in terms of the kinds of extra incentives they supply to investment in the South. Provisions in the first group, numbers 1 through 6, all reduce the initial capital cost of a new investment in the South as compared with what it would otherwise have been. The first reduces the fees and taxes applicable to the organization (or reorganization or expansion) of an enterprise and its acquisition of assets. The next three directly reduce the purchase cost of new plant and equipment. The fifth involves direct subsidies for the purchase of plant and equipment, and the sixth in effect provides "free" capital to the new enterprise to use in purchasing plant and equipment. Provisions in the next group, numbers 7 through 9, facilitate the financing of new or expanded enterprises at special interest rates. The final provision operates to exempt any profits earned on such investment from income taxation.

The first group of provisions — those reducing the initial cost of capital assets for the new enterprise — might have a twofold effect on the incentive for investment in the South. Assuming a limitation on the capital available to an entrepreneur, and assuming, further, some economies of scale in a given field, a reduction in the cost of assets might permit an entrepreneur with *given available funds* to take advantage of economies of scale otherwise denied to him.

While the above is a real possibility, we shall not, for rather obvious reasons, attempt to consider it. Rather, we confine our consideration to the second and more direct result of the reduction in capital cost. We shall assume that a potential investment to be made in the South is on the same physical scale as a potential investment in the North, and recognize the fact that the lower capital cost reduces annual charges for depreciation; also, of course, it reduces the interest bill on that part of the capital cost that is loan-financed. The assumed reduction in interest charges could be computed in various ways. *We assume that the same percentage of the smaller capital cost is financed by loans.* Thus the necessary loan will be smaller, and the annual interest charge is therefore less, even if the interest rate were the same. Alternatively, we might have assumed that *all* of the reduction of capital cost through the agevolazioni operated to reduce the amount of borrowing, thus reducing still further the interest charge. For reasons that we shall touch on later, we choose the former, more modest assumption in our attempt to measure the impact of the agevolazioni.

The reduction of capital cost not only lowers the current charge for interest, but, as noted, it also lowers the annual depreciation charge. At least this is true if we conceive of depreciation as the recovery by the firm of its initial investment. Of course, if we think of depreciation as a fund for *replacement* of assets, this is not true; in this latter concept, depreciation should be based on replacement cost rather than original cost, and the provisions involved do not reduce future replacement cost. In considering the incentive to initial investment, however, we adhere to the former conception. This is especially appropriate if we think in terms of a context of growth, and regard the agevolazioni as one means, among others, of overcoming an initial disadvantage and inertia, and assume that the expansion process has a certain self-supporting and cumulative nature once the process is set in motion.

One has a choice of looking at the effect of the reduction of capital cost in either of two ways. One is as we have just done: a lower capital cost reduces annual depreciation and interest charges, and thus raises the potential annual profit. The alternative way, which is theoretically more correct, is to say that it raises the "marginal efficiency of investment". One may define this marginal efficiency as equal to that rate of discount which, when applied to the series of expected future gross returns (8) over the life of the asset, will just reduce the sum of these discounted returns to equal the cost of the asset. It is clear that a reduction in the cost of the asset raises the rate of discount which can be applied to the series of expected returns, and thus raises the "marginal efficiency" of the asset. If we argue that it pays to invest whenever marginal efficiency exceeds the rate of interest, and that profit maximization and competition will cause investment to be driven to the point at which the marginal return equals the rate of interest, this can be shown to be formally equivalent to the proposition that investments will be undertaken where the expected gross returns over the life of the asset equal depreciation plus interest on the net investment.

However, for these two formulations to be fully equivalent require that depreciation in the latter formulation be computed not on a straight-line basis (or any other simple basis), but by a very complex formula; and that interest be computed on the *entire net investment* remaining after depreciation. This means that a test of profitability of a prospective investment using straight-line depreciation and a constant annual interest cost over the life of a loan which covers only part of the cost is a biased and imperfect test. Ideally, then, our calculations should be cast in the form of computing the effect of the reduction in capital cost on the marginal efficiency of investment. We use, however, the cruder test, treating annual straight-line depreciation and annual interest on borrowed funds as the cost of capital, because it is much simpler and easier to present it this way. We do not think that the bias is serious. Moreover, it is probably closer to the kind of imperfect calculation that a businessman considering a prospective investment is likely to make.

There is one other reason. Posing the investment decision in terms of a comparison between marginal efficiency and the rate of interest implies that it is a matter of indifference whether the funds

(8) Gross in the sense that they are figured before depreciation and interest.

employed are borrowed or are supplied by the owner, for the owner would (a) require this return in order to be willing to use his own capital, and (b) can borrow (without limit) at this rate. That is, this approach implies a perfect capital market, which exists nowhere and is perhaps less closely approximated in Italy than in some other economies. This particularly raises problems when part of the funds required can be obtained at a specially reduced rate of interest, as is the case here. That is, an imperfect capital market has been deliberately created by the agevolazioni.

Nevertheless, thinking of the matter in the more theoretically correct terms does call attention to the possible desirability of considering an imputed interest return on the entrepreneur's own funds as a further element of annual cost. This we have not done in the calculations that follow. We do not believe, however, that this constitutes a serious limitation. For we are considering comparisons between an investment benefiting from the agevolazioni, and one not so benefiting. In each case, we assume that the same percentage of total capital is supplied by the owner. If we were to calculate an imputed interest cost on the non-borrowed funds, at whatever rate might be appropriate, we would have to do it for both sides of the comparison, and the net outcome would be little affected. Further, we again suspect that our procedure, though theoretically imperfect, perhaps comes closer to the kind of calculation on which the typical entrepreneur might rely than would the more ideal sort of calculation. However, the considerations advanced above do support us in our more conservative assumption — referred to earlier — that the same *percentage* of borrowed funds is used in each case, rather than that the reduction of capital cost applies entirely to reduce the amount of borrowed capital employed. If we made the latter assumption, our failure to impute an interest cost on the entrepreneur's own funds would constitute a more serious limitation.

A second category of agevolazioni (numbers 7, 8, and 9), relates to the *financing* of new investments. Loans at reduced rates of interest are available through the special credit institutes. The effect of such loans on the incentive to invest is quite simple: annual fixed charges for interest payment are further reduced over the life of the loan.

There is a second possible effect of the special credit institutes created to help finance southern enterprises. In many countries in

which special credit aids are provided to otherwise marginal enterprises, their primary impact is to permit enterprises to borrow that would otherwise be unable to borrow at any rate of interest. That is, in the absence of special machinery, there exists a degree of capital rationing which excludes these firms, even though able and (perhaps) willing to borrow at the going rates paid by better established enterprises.

It seems quite possible that, also in Italy, there may be rationing standards which would otherwise exclude some or all of the potential investors in the South with whom we are concerned from access to credit. If so, the effect of the special credit institutes might be not only to supply credit on terms more favorable than those available for investment in the North, but also to supply credit to Southern enterprises otherwise unable to get it.

We do not consider this rationing aspect, however, for two reasons: one, its effect is not on the incentive to invest, but rather on the ability to invest; and two, we are not clear to what extent a lower standard of eligibility for borrowing is in fact applied by the special institutes. Complaints are frequent that the guarantees required by the institutes are unduly rigorous — no less demanding than any other bank would require. Further, it seems clear that the institutes have received requests for loans well in excess of the amount of the funds available, and that they, too, are able to "ration" the funds to borrowers whose credit-worthiness is up to customary standards. (They may ration, as well, in terms of social objectives — e.g., the locality involved, employment likely to be created, etc. But there is no evidence that normal standards of credit-worthiness are sacrificed to achieve social objectives).

We should note that the special credit institutes grant loans for periods up to ten or fifteen years, while the life of the enterprises considered, and even of some of their specific assets, exceeds fifteen years. Thus, assuming that the loans would not be renewable at the special rates beyond the initial period, our calculations are valid only for the first ten or fifteen years of the life of the new enterprise, and may overstate the incentive effect. However, we do not consider this a serious limitation. In any case, unless we wish to enter an imputed interest cost for owners' capital, it is difficult to handle the subsequent period, assuming that the loans are repaid out of profits.

We include in our second category of agevolazioni — those relating to credit — the provision of equity funds in Sicily through the " Società Finanziaria per Azioni ". This perhaps should be considered as a separate category, for its economic effects might be rather distinct from the provision of loan capital at special rates of interest. However, we have not considered this provision in our sample calculations, and thus include it in the second group merely for convenience.

The final kind of agevolazioni, which grants an exemption from income tax of profits earned on the new Southern investment, has very different economic effects from those previously considered. Such exemption obviously has no effect on the enterprise which earns no profit; and its importance is proportional to the profit that is earned. For highly profitable enterprises — where presumably no special incentive is needed — the effect on yield can be quite important. Its *incentive* effect lies only in this: if the *other* provisions permit a profit to be made under circumstances that would otherwise not permit it, or if they enlarge the potential profit, the entrepreneur may be more attracted to invest because the profits are not subject to tax. Or if a potential investment would otherwise be equally profitable before income tax in North and South, the tax exemption may induce him to prefer the South. In effect, then, this form of agevolazioni, by itself, has little importance. It does little good to exempt an unprofitable enterprise from taxes on non-existent profits. But it compounds and exaggerates the effects of the other agevolazioni. Further, if an enterprise promises *fluctuating* before-tax profits (e.g., losses in some years and profits in others), then, since the Italian income tax law provides no offsets of losses against profits over periods longer than one year, the income tax exemption may turn an average after-tax loss into an average profit.

III. The Examples

Our calculations of the quantitative importance of the agevolazioni all relate to a particular investment that could be made either in the North or in the South, and that would be identical in design in either instance. In order to calculate the effects of the agevolazioni on the profitability of this new enterprise, a number of assumptions are necessary. Our first assumption is that the basic initial

capital cost (but not necessarily the operating cost) of the new plant would be the same, namely, 1,000 — except for the agevolazioni — whether it were built in the North or the South. Construction costs are probably no higher in the South than in the North, while machinery costs should be roughly the same if the machinery were imported by water. If the machinery were manufactured in Italy (and therefore in the North), or were imported by rail, the freight cost would, of course, be higher in the South. On the other hand, the special freight rate reductions (number 4 in our list of agevolazioni) of which we take no other specific account, should tend to minimize this difference. If the reader believes that the initial capital cost (independently of the agevolazioni) should be taken as higher in the South, by any particular percentage, he can repeat our calculations on that assumption.

We also need to assume something about the structure of the investment — the relative importance of land, buildings, machinery, and other fixed assets. Our assumption is that the enterprise we are considering has the average structure of investment cost revealed by the loan applications approved by I.R.F.I.S. for 1953-57 (9). This structure involved 60.2% of total cost going for machinery and equipment, 30.4% for land and buildings, and 9.4% for other. Actually, the calculations are not particularly sensitive to this structure, at least since August 1, 1959. Subsidies (agevolazioni No. 5) are now 20% on both buildings and equipment. If advantage is instead taken of the customs exemption for *imported* machinery, this is likewise of the order of 20%.

With only the above assumptions, we can measure the extent of the reduction of initial capital asset cost through the agevolazioni. This is done both for an enterprise using imported machinery (Table I) and one using domestic machinery (Table II).

In Table I we compare the capital cost in the North with that in the South. We show five cases for the South. The column headed A shows the costs when full advantage is taken of the customs exemption and all other agevolazioni (except 5, the subsidy for machinery, which is not applicable if the customs exemption is used). In column A', we substitute for the customs exemption the subsidy for machinery. In the average case, the subsidy would be

(9) I.R.F.I.S., Bilancio al 31 dicembre 1957, prospetti statistici.

TABLE I

COMPARISON OF INITIAL CAPITAL ASSET COSTS, IN NORTH AND SOUTH, AS AFFECTED BY AGEVOLAZIONI: CASE OF IMPORTED MACHINERY

	North	South (1)				
		A	A′	B	C	D
1. Basic capital cost	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0
2. Registration fees (2)	+ 21.3	—	—	—	—	—
3. Customs duties on machinery (3)	+ 132.4	—	+ 132.4	—	—	—
4. IGE (4)	+ 20.9	+ 10.4	+ 10.4	+ 10.4	+ 10.4	+ 10.4
5. Direct subsidy: — plant (5)	—	- 60.8	- 60.8	—	- 60.8	—
6. Direct subsidy: — machinery (6)	—	—	- 120.4	—	—	—
7. Tax exemption on reinvested earnings (7)	—	- 90.0	- 90.0	- 90.0	—	—
8. Total capital cost	1174.6	859.6	871.6	920.4	949.6	1010.4
9. Total capital cost as percentage of North	100.0	73.2	74.2	78.3	80.8	86.0

(1) See text for explanation of cols. A-D.
(2) On transfer of land and buildings in North only: .07 × 304.
(3) At an estimated 22%, where paid: .22 × 602.
(4) For North, 3% on all except land and buildings; in South 1.5%: .03 × 696 and .015 × 696.
(5) In communities in South of population less than 200,000 and deficient in industry: .2 × 304.
(6) Same as (5), except: .2 × 602.
(7) On one-half of cost: .18 × 500.

TABLE II

COMPARISON OF INITIAL CAPITAL ASSET COSTS, IN NORTH AND SOUTH, AS AFFECTED BY AGEVOLAZIONI: CASE OF DOMESTIC MACHINERY

	North	South (1)			
		A	B	C	D
1. Basic capital cost	1000.0	1000.0	1000.0	1000.0	1000.0
2. Registration fees (2)	+ 21.3	—	—	--	—
3. IGE (4)	+ 20.9	+ 10.4	+ 10.4	+ 10.4	+ 10.4
4. Direct subsidy: — plant (5)	—	- 60.8	- 60.8	—	—
5. Direct subsidy: — machinery (6)	—	- 120.4	- 120.4	—	—
6. Tax exemption on reinvested earnings (7)	—	- 90.0	—	- 90.0	—
7. Total capital cost	1042.2	739.2	829.2	920.4	1010.4
8. Total capital cost as percentage of North	100.0	70.9	79.6	88.3	97.0

Notes: See Table I.

less than the customs exemption. Columns B and C therefore show the results of combining the customs exemption (rather than the subsidy for machinery) and the I.G.E. reduction with either the subsidy on plant *or* the tax exemption on reinvested profits, and column D, with neither. We show these three partial combinations because, unlike the customs exemption and the I.G.E. reduction, the subsidy and the tax exemption are not automatically and universally applicable. We use the maximum subsidy (20%), and the maximum tax-free reinvestment of profits (9% of the cost).

Table II should be self-explanatory for the case of domestic machinery. Column A shows the maximum combination of agevolazioni, and columns B, C, and D various partial combinations.

In constructing these tables one had the choice of treating various items as additions to "basic cost" in the North, or alternatively as reductions of this cost in the South. This makes very little difference in terms of results, but we believe that our decisions were the more appropriate ones.

Our results are most easily summarized by the final row in each table. The agevolazioni reduce initial capital costs by amounts ranging from a trivial 3%, when only the exemption from registration fees and the I.G.E. reduction are available, to a substantial 29.1% or 26.8% (in the cases of domestic and imported machinery respectively), when full advantage is taken of all the available agevolazioni in combination. These numerical results depend on the particular assumptions made, but are not highly sensitive to moderate changes in these assumptions.

We now wish to see what effect these reductions of initial capital cost may have for the profitability of current operations, in combination with the remaining kinds of agevolazioni.

To keep our calculations manageable, we shall not trace through all of the possible combinations shown in Tables I and II. Instead, we shall take cases A and C from each table. Each case A represents a maximum application of the available agevolazioni; each case C represents an intermediate application, in which some important type of fiscal aid is not available, but the others are. The interested reader can make the necessary calculations for the other cases. However, each case B is intermediate between the cases A and C; and the agevolazioni are relatively insignificant in the cases D.

We first consider the combined effects of the reduction of capital cost, found above, and of the special rates of interest. (We do not assume that any advantage is taken of special interest rates on working capital). Total annual depreciation and interest charges are shown in Table III for the six cases we are considering, on the basis of two different sets of interest rate assumptions, and two assumptions as to the percentage of the total capital cost covered by loans. Some discussion is necessary regarding both pairs of assumptions.

Prior to the slowing-down of economic activity that began in late 1957, " normal " interest rates in the absence of special credit facilitation probably averaged, for the type of credit we are considering, somewhere between 8 and 11 percent. To these annual rates must be added a charge of 5% of the loan (" imposta di registro e ipotecaria "), which, on a ten-year loan, has the effect of adding roughly one-half percent to the annual interest cost. The special credit institutes were at that time providing loans at 5.5%, and such loans were exempt from the tax. Thus, the rates of 5.5% in the South and 9.5% in the North, used in one of our sets of comparisons, seem to provide a conservative measure of the impact of the credit agevolazioni, up to the recent period.

In the face of greatly increased bank liquidity beginning in 1958, interest rates have tended to decline appreciably. Our second assumption of an 8% rate (including tax) in the North is, probably, however, still a conservative (i.e., low) assumption as to the present cost of credit in the absence of special provision (10). This assumed rate of 8% may then be contrasted with the new rate of 3% on loans from the special credit institutes for the South. There is, however, one further qualification necessary. The same act (Law No. 623, July 30, 1959) which reduced the rate to 3% for small and medium sized enterprises in the South also provided for similar loans in the North at 5%. Such loans in the North are limited to Lit. 500 million (1,000 million in special cases) as compared with Lit. 1,000 million (1,500 million in special cases) in the South. The

(10) E.g., the President of the General Confederation of Italian Industry stated to the Committee of Industry of the Chamber of Deputies on June 18, 1959, that " The total cost to Italian private companies of debenture issues, taking into account taxes (other than income taxes) levied on them, expenses and bank commissions, and the difference between the issue price and the nominal value, still amounts to more than 8%... " (*Mondo Economico*, Anno XIV, No. 26 (June 27, 1959), p. 36.

TABLE III

ANNUAL DEPRECIATION AND INTEREST CHARGES, AT ASSUMED INTEREST RATES OF 9.5% AND 5.5%, AND 8% AND 3%, FOR NORTH AND SOUTH RESPECTIVELY

	Imported machinery			Domestic machinery		
	North	South A	South C	North	South A	South C
a. Initial total capital cost (1):	1174.6	859.6	949.6	1042.2	739.2	920.4
1. Of which, land and buildings (2)	325.3	220.3	243.2	325.3	219.6	277.0
2. Of which, machinery and other (3)	849.3	639.3	706.4	716.9	519.6	643.4
b. Annual depreciation:						
1. Land and buildings (4)	10.8	7.3	8.1	10.8	7.3	9.2
2. Machinery and other (5)	84.9	63.9	70.6	71.7	52.0	64.3
c. Annual interest charge, at 9.5% in North, 5.5% in South:						
1. Loan of 50%	55.8	23.6	26.1	49.5	20.3	25.3
2. Loan of 65%	72.5	30.7	34.0	64.3	26.5	33.0
d. Annual interest charge, at 8% in North, 3% in South:						
1. Loan of 50%	47.0	12.9	14.2	41.7	11.1	13.8
2. Loan of 65%	61.1	16.8	18.5	54.2	14.4	17.9
e. Annual depreciation and interest: at 9.5% and 5.5%:						
1. Loan of 50%	151.5	94.8	104.8	132.0	79.6	98.8
2. Loan of 65%	168.2	101.9	112.7	146.8	85.8	106.5
at 8% * and 3%:						
3. Loan of 50%	142.7	84.1	92.9	124.2	70.4	87.3
4. Loan of 65%	156.8	87.0	97.2	136.7	73.7	91.4

(1) From Tables I and II. (2) Sum of 304 plus (where applicable) registration fees, less (where applicable) subsidy for plant and a proportionate share of the income tax exemption. (3) Sum of 696, plus (where applicable) customs duties and IGE, less (where applicable) balance of income tax exemption. (4) Assuming thirty year life (land should not be depreciated, but we assume its cost is negligible. (5) Assuming ten year life.

* *See editorial post scriptum at the end of the article. For investments in the North which may benefit from the 5 per cent "subsidized" rate (Law No. 623 of July 30, 1959) the annual depreciation and interest charges will be reduced: 1) from 142.7 to 125.1 and from 156.8 to 133.9 for loans of 50 per cent and 65 per cent respectively in the case of imported machinery; 2) from 124.2 to 108.6 and from 136.7 to 116.3 in the case of domestic machinery. With rates at 7 per cent the reductions are 136.8 and 149.2 in the first case; 119 and 130 in the second one.* [Ed. Note].

duration of loans in the North is restricted to 10 years, as opposed to 15 years in the South. And, although conclusive information is not available, there is some indication that the chances of receiving such a loan in the North are less than in the South. One reason is the fact that the criteria which will be used for determining the reimbursement of the special credit institutes for the difference between these special interest rates and their normal charges explicitly favor those institutes lending for investment in the South (11). Nevertheless, some firms would be eligible for 5% loans in the North, in contrast with 3% in the South, and, for such firms, our calculations exaggerate the present difference in interest cost (12).

The other variable which influences our comparison is the size of the loan received at special interest rates. The law permits loans in an amount up to 70% of the total cost of the investment. On the other hand, a firm receiving the subsidy of 20% on both plant and equipment, would probably not be permitted to borrow the full 70% (13). Our figure of 65% would appear to be close to the maximum. The *average* percentage of loans by the special credit institutes for the South to investment cost is frequently assumed to be around 50%. (For I.R.F.I.S., 1953-57, the average loan was 46.8% of the total investment cost). Thus, we use 65% as a " high " figure, and 50% as a " typical " figure. These two loan percentages, plus the two sets of interest rate assumptions, provide us with four alternative estimates of annual interest and depreciation cost for each of our six cases.

As indicated in our earlier discussion, the annual capital cost in the South is lower than in the North in our examples for two reasons. First, the lower initial asset cost reduces depreciation and the amount necessary to be borrowed. Second, the borrowing is at a lower rate of interest. As Table III indicates, some rather large divergences appear between annual capital costs in North and South, especially in the columns A (i.e., where maximum advantage is taken of the agevolazioni which reduce initial capital cost).

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(11) Further, the law provides for an increase of Lit. 18,000 million or more in the capital funds of the special credit institutes making these loans, of which a minimum of 2/3 is allocated to I.S.V.E.I.M.E.R., I.R.F.I.S. and C.I.S.

(12) *See editorial post scriptum at the end of the article.* [Ed. Note].

(13) The maximum loan plus subsidy is 85%. On the other hand, not all capital costs are for plant and equipment.

We still need, however, some further basis for judging the significance of these differences.

There are two ways in which we might now assess the significance of the cost differences which we have found. We might make the assumption that (a) sales and (b) operating costs for our identical plants were the same in both the North and the South, and discover the effect of the differences in annual depreciation and interest on the net profit, both before and after income tax. This will be our first assumption. But this assumption may frequently be contrary to fact. Among the reasons for the failure of investment to occur spontaneously in the South are such factors as a shortage of entrepreneurial talent or spirit, inertia, and *non-economic* preferences to invest in the North. But, in addition to these, it seems clear that costs are often expected to be or are higher (or sales returns lower) in the South than in the North, for a complex of reasons into which we need not here enter. It is, therefore, more interesting to make our comparison in a different manner; namely, to ask how much of an extra cost (or lower sales return) in the South might be offset by the agevolazioni, so as to permit as high a net profit in the South as in the North. First, however, we turn to the comparison of profits on the assumption of *equal* sales and operating costs. We shall restrict our comparison to the case of loans covering 50% of capital cost in each area. Some illustrative results using different return and interest rate assumptions are shown in Table IV, parts A, B, C, and D. The reader can compute the effect of 65% loans if he is interested.

In Parts A and B of Table IV we consider an investment which would yield the same annual gross return of 250 whether constructed in North or South. By gross return, we mean the difference between sales and all costs other than interest and depreciation. Part A uses interest rates of 9.5% and 5.5% for North and South, on loans of 50% of capital cost, and B uses 8% and 3%. Parts C and D use the higher gross return of 400. The absolute levels of net profit (before and after taxes) are not significant, for these depend on our arbitrarily chosen gross returns. Rather, the significant matter is the comparison of North and South.

For example, in the imported machinery case, with interest rates of 9.5% and 5.5%, a gross return of 250 would yield a net profit before taxes in the North which represents a 6.7% return on investment. In the South, taking advantage of all agevolazioni, the

TABLE IV *

PROFITS BEFORE AND AFTER TAXES IN NORTH AND SOUTH, ON ASSUMPTION OF EQUAL SALES AND OPERATING COSTS

	Imported machinery			Domestic machinery		
	North	South		North	South	
		A	C		A	C
A. Interest rates 9.5% and 5.5%, gross return 250:						
1. Assumed gross return . . .	250.0	250.0	250.0	250.0	250.0	250.0
2. Interest and depreciation (1) .	151.5	94.8	104,8	132.0	79.6	98.8
3. Net profit before taxes . . .	98.5	155.2	145.2	118.0	170.4	151.2
4. Income tax (2)	21.2	—	—	25.4	—	—
5. Net profit after taxes	77.3	155.2	145.2	92.6	170.4	151.2
6. Total investment (3)	1,474.6	1,259.6	1,349.6	1,342.2	1,139.2	1,320.4
7. Percent return before tax . .	6.7	12.3	10.8	8.8	14.9	11.5
8. Percent return after tax . . .	5.2	12.3	10.8	6.9	14.9	11.5
B. Interest rates 8% and 3%, gross return 250:						
1. Assumed gross return . . .	250.0	250.0	250.0	250.0	250.0	250.0
2. Interest and depreciation (1) .	142.7	84.1	92.9	124.2	70.4	87.3
3. Net profit before taxes . . .	107.3	165.9	157.1	125.8	179.6	162.7
4. Income tax (2)	23.1	—	—	27.0	—	—
5. Net profit after taxes	84.2	165.9	157.1	98.8	179.6	162.7
6. Total investment (3)	1,474.6	1,259.6	1,349.6	1,342.2	1,139.2	1,320.4
7. Percent return before tax . .	7.3	13.2	11.6	9.3	15.7	12.3
8. Percent return after tax . . .	5.7	13.2	11.6	7.4	15.7	12.3
C. Interest rates 9.5% and 5.5%, gross return 400:						
1. Assumed gross return . . .	400.0	400.0	400.0	400.0	400.0	400.0
2. Interest and depreciation (1) .	151.5	94.8	104.8	132.0	79.6	98.8
3. Net profit before taxes . . .	248.5	305.2	295.2	268.0	320.4	301.2
4. Income tax (2)	53.4	—	—	57.6	—	—
5. Net profit after taxes . . .	195.1	305.2	295.2	210.4	320.4	301.2
6. Total investment (3)	1,474.6	1,259.6	1,349.6	1,342.2	1,139.2	1,320.4
7. Percent return before tax . .	16.8	24.2	21.9	20.0	28.1	22.8
8. Percent return after tax . . .	13.2	24.2	21.9	15.7	28.1	22.8
D. Interest rates 8% and 3%, gross return 400:						
1. Assumed gross return . . .	400.0	400.0	400.0	400.0	400.0	400.0
2. Interest and depreciation (1) .	142.7	84.1	92.9	124.2	70.4	87.3
3. Net profit before taxes . . .	257.3	315.9	307.1	275.8	329.6	312.7
4. Income tax (2)	55.3	—	—	59.3	—	—
5. Net profit after taxes	202.0	315.9	307.1	216.5	329.6	312.7
6. Total investment (3)	1,474.6	1,259.6	1,349.6	1,342.2	1,139.2	1,320.4
7. Percent return before tax . .	17.4	25.1	22.8	20.5	28.9	23.7
8. Percent return after tax . . .	13.7	25.1	22.8	16.1	28.9	23.7

* *See also editorial post scriptum and Table IV bis at the end of the article.* [Ed. Note].

(1) From Table III: Parts A and C from line e, I; parts B and D from line e, 3.

(2) In North, 21.5% of profit before taxes: 18% " Ricchezza Mobile ", 3.5% " Imposta sulle industrie ".

(3) From Tables I and II, plus an assumed working capital of 300. There are no general data on working capital for Italian companies. Data furnished by I.R.F.I.S. in private correspondence revealed that working capital for the investments financed by I.R.F.I.S. loans during 1953-57, equalled 16.2% of total assets. This seems remarkably low, and we have arbitrarily raised it to a figure of 300, which ranges between 20% and 26% of total assets. Since we have assumed identical plants and operations, North and South, we assumed identical working capital, too.

same gross return would yield a net profit before taxes of 12.3% on investment, a difference of 5.6% in profit on investment. This difference is somewhat, but not excessively sensitive to the assumed level of gross return. If a gross return of 400 is instead assumed (Part C), the two rates are 16.8% and 24.2%, a difference of 7.4%.

The difference in *after-tax* profit rates is, of course, greater, because of the income tax exemption for new investments in the South. And this difference becomes increasingly significant the higher the net profit before tax. For example, under the same assumptions, a gross return of 250 will yield *after-tax* profits of 5.2% and 12.3% on investment, a difference of 7.1%. This difference rises to 11.0% (24.2%-13.2%) in the case of a gross return of 400. As previously noted, the income tax exemption means nothing unless there is some income without it, and means progressively more the higher the before-tax profit.

The reader can make similar comparisons for the other cases. In general, we find that — assuming equal operating costs and returns — when full advantage is taken of the agevolazioni, they could increase a "normal" 6 to 9% profit rate before taxes by a further 5 to 6%. After taxes, the improvement is somewhat greater. For highly-profitable enterprises — profit rates of 15 to 20% before taxes — the agevolazioni would appear to add another 7 to 9% before taxes. After taxes, the effect is all the more striking.

All of the above is, of course, on the assumption that costs and sales are the same in North or South, an assumption possibly contrary to fact. We now ask how large a percentage difference in unit costs the agevolazioni might offset. To answer this kind of question we need to make still further assumptions not previously required. We need to know the "capital turnover" for our hypothetical firm (ratio of sales to initial investment). As everyone knows, this ratio varies widely among industries. And its variation makes considerable difference for our results. Thus we find that for some industries (those with relatively low ratios of sales to capital) the agevolazioni can overcome substantially larger cost differences than is the case for industries having relatively low capital requirements per unit of sales.

Table V shows the method used for making this calculation, in the case of imported machinery and maximum advantage taken of agevolazioni, for interest rates of 9.5% and 5.5% and loans of

TABLE V

DIFFERENCES IN OPERATING COSTS WHICH CAN BE OFFSET BY AGEVOLAZIONI, CASE OF IMPORTED MACHINERY, AND MAXIMUM ADVANTAGE TAKEN OF AGEVOLAZIONI, INTEREST RATES OF 9.5% AND 5.5%, WITH LOANS OF 50%

	North	South
a. Sales 1,250, operating costs in North 1,000:		
1. Investment (1)	1,474.6	1,259.6
2. Sales	1,250.0	1,250.0
3. Costs	1,000.0	1,039.7
4. Gross return	250.0	160.3
5. Depreciation and interest (2)	151.5	94.8
6. Net profit before tax	98.5	65.5
7. Income tax	21.2	—
8. Net profit after tax	77.3	65.5
9. Percent net profit after tax	5.2%	5.2%
10. Permissible cost difference (3)		9.0%
b. Sales 2,500, operating costs in North 2,250:		
1. Investment (1)	1,474.6	1,259.6
2. Sales	2,500.0	2,500.0
3. Costs	2,250.0	2,339.7
4. Gross return	250.0	160.3
5. Depreciation and interest (2)	151.5	94.8
6. Net profit before tax	98.5	65.5
7. Income tax	21.2	—
8. Net profit after tax	77.3	65.5
9. Percent net profit after tax	5.2%	5.2%
10. Permissible cost difference (3)		4.0%
c. Sales 1,250, operating costs in North 850:		
1. Investment (1)	1,474.6	1,259.6
2 Sales	1,250.0	1,250.0
3. Costs	850.0	988.9
4. Gross return	400.0	261.1
5. Depreciation and interest (2)	151.5	94.8
6. Net profit before tax	248.5	166.3
7. Income tax	53.4	—
8. Net profit after tax	195.1	166.3
9. Percent net profit after tax	13.2%	13.2%
10. Permissible cost difference (3)		16.3%
d. Sales 2,500, operating costs in North 2,100:		
1. Investment (1)	1,474.6	1,259.6
2. Sales	2,500.0	2,500.0
3. Costs	2,100.0	2,238.9
4. Gross return	400.0	261.9
5. Depreciation and interest (2)	151.5	94.8
6. Net profit before tax	248.5	166.3
7. Income tax	53.4	—
8. Net profit after tax	195.1	166.3
9. Percent net profit after tax	13.2%	13.2%
10. Permissible cost difference (3)		6.6%

(1) From Table I, line a, plus 300 working capital.
(2) From Table III, line e, 1.
(3) $\frac{\text{(Cost South) - (Cost North)}}{\text{(Cost North)}}$

50% of capital cost. Table VI presents only the final results for the other cases we have been considering.

To understand the calculations in Table V, consider part a, which assumes a gross return of 250 in the North, arising from annual sales of 1,250 and annual costs (other than interest and depreciation) of 1,000. This involves a relatively low rate of capital turnover — annual sales are less than total investment. Consider first the column headed "North". With the given assumptions as to capital structure, interest rates, etc., the net profit after taxes is seen to be 5.2% of total investment (same as Table IV). If we now transfer this same figure into the column labelled "South" (line 9), and multiply this by the smaller capital investment in the South (1,259.6, line 1), we find the necessary profit: 65.5. Since this profit in the South is exempt from income tax, we enter it again in line 6. If we now add the appropriate depreciation and interest cost (line 5), we get the necessary gross return shown in line 4. With identical sales in South and North (1,250), this means that costs in the South could be as high as 1,089.7, and still yield the same profit as in the North. Comparing this with the costs in the North — assumed to be 1,000 — we conclude that unit costs in the South could exceed those in the North by 9.0%. (We could, alternatively, have assumed identical costs in each region, and computed how much lower sales revenues might have been in the South. The result of this calculation is sales of 1,170.3, roughly 7.2% below those of the North). It should be emphasized that we are assuming the same number of units produced and sold in either case. If we should assume smaller production and sales in the South, the calculation would, obviously, be less favorable to the South.

The advantage provided by the agevolazioni is seen to be less significant if the capital turnover is higher. In part B we use the same gross return of 250 in the North, but it arises from sales twice as great, namely 2,500. If, now, we translate the agevolazioni into a permissible percentage of higher costs, the figure is greatly reduced. Instead of 9% higher unit costs, the figure is reduced to 4%.

This result should not be at all surprising. The effect of the agevolazioni is primarily (except for the income tax exemption) to reduce annual capital costs. In an industry in which capital costs are a relatively high percentage of total costs, the agevolazioni quite obviously provide greater advantage than in an industry in which capital costs are relatively less important. This effect is precisely

TABLE VI

PERMISSIBLE HIGHER COST IN SOUTH, UNDER VARIOUS ASSUMED CONDITIONS

1. Imported machinery	
a. Sales 1,250, costs in North 1,000 (low capital turnover, low gross margin)	
I. Interest rates 9.5% and 5.5%; 50% loans	
A. All applicable agevolazioni	9.0%
C. All agevolazioni except reinvestment of tax-free earnings	7.5%
II. Interest rates 8% and 3%; 50% loans	
A. All applicable agevolazioni	9.4%
C. All agevolazioni except reinvestment of tax-free earnings	8.0%
b. Sales 2,500, costs in North 2,250 (high capital turnover, low gross margin)	
I. Interest rates 9.5% and 5.5%; 50% loans	
A. All applicable agevolazioni	4.0%
C. All agevolazioni except reinvestment of tax-free earnings	2.9%
II. Interest rates 8% and 3%; 50% loans	
A. All applicable agevolazioni	4.2%
C. All agevolazioni except reinvestment of tax-free earnings	3.6%
c. Sales 1,250, costs in North 850 (low capital turnover, high gross margin)	
I. Interest rates 9.5% and 5.5%; 50% loans	
A. All applicable agevolazioni	16.3%
C. All agevolazioni except reinvestment of tax-free earnings	13.9%
II. Interest rates 8% and 3%; 50% loans	
A. All applicable agevolazioni	17.1%
C. All agevolazioni except reinvestment of tax-free earnings	14.4%
d. Sales 2,500, costs in North 2,100 (high capital turnover, high gross margin)	
I. Interest rates 9.5% and 5.5%; 50% loans	
A. All applicable agevolazioni	6.6%
C. All agevolazioni except reinvestment of tax-free earnings	5.6%
II. Interest rates 8% and 3%; 50% loans	
A. All applicable agevolazioni	6.9%
C. All agevolazioni except reinvestment of tax-free earnings	5.8%

(*Cont.* TABLE VI)

PERMISSIBLE HIGHER COST IN SOUTH, UNDER VARIOUS ASSUMED CONDITIONS

2. Domestic machinery	
a. Sales 1,250, costs in North 1,000 (low capital turnover, low gross margin)	
I. Interest rates 9.5% and 5.5%; 50% loans	
A. All applicable agevolazioni	9.2%
C. All agevolazioni except subsidies	6.0%
II. Interest rates 8% and 3%; 50% loans	
A. All applicable agevolazioni	9.5%
C. All agevolazioni except subsidies	6.5%
b. Sales 2,500, costs in North 2,250 (high capital turnover, low gross margin)	
I. Interest rates 9.5% and 5.5%; 50% loans	
A. All applicable agevolazioni	4.1%
C. All agevolazioni except subsidies	2.7%
II. Interest rates 8% and 3%; 50% loans	
A. All applicable agevolazioni	4.2%
C. All agevolazioni except subsidies	2.9%
c. Sales 1,250, costs in North 850 (low capital turnover, high gross margin)	
I. Interest rates 9.5% and 5.5%; 50% loans	
A. All applicable agevolazioni	16.6%
C. All agevolazioni except subsidies	11.0%
II. Interest rates 8% and 3%; 50% loans	
A. All applicable agevolazioni	17.2%
C. All agevolazioni except subsidies	11.8%
d. Sales 2,500, costs in North 2,100 (high capital turnover, high gross margin)	
I. Interest rates 9.5% and 5.5%; 50% loans	
A. All applicable agevolazioni	6.7%
C. All agevolazioni except subsidies	4.5%
II. Interest rates 8% and 3%; 50% loans	
A. All applicable agevolazioni	7.0%
C. All agevolazioni except subsidies	4.8%

what we have now found. It has some policy consequences that we shall comment on briefly in our concluding section.

Table VI presents the measure of permissible cost differences for all the combinations of agevolazioni presented in Table I and II, for both sets of interest rate assumptions, for two capital-turnover ratios, and two levels of gross return. This gives us a total of 64 different combinations.

We regard the figures shown in Table VI as the best single measures of the significance of the agevolazioni. By comparing all pairs of values representing combinations which differ in only a single respect, we get the best possible measure of the relative importance of the element singled out for comparison.

IV. Conclusions

Readers who may have a particular interest in some aspect of the agevolazioni can use the calculations summarized in Table VI to throw light on the operation of that aspect. We confine ourselves to a few general observations.

1. Some of the agevolazioni are individually of little importance. These include, obviously, the I.G.E. exemption, and the reduction or elimination of registration fees. In the same category are other items which we have not considered at all, such as the freight rate reductions on machinery and building materials. The administrative cost of these — both to the government and to the firms which take advantage of them — probably far outweighs their importance. It would appear sensible to eliminate some of these minor concessions, and, if desired, use the savings to increase the magnitude of the remaining agevolazioni.

2. The most important agevolazioni are: the direct subsidies on machinery and plant, the customs exemption, the loans at special interest rates, and the tax exemption on reinvested profits.

3. The exemption from income tax of profits earned in the new Southern enterprises is of lesser importance, except where the Southern enterprise is already profitable. We question the effectiveness of this particular provision except perhaps on psychological

grounds, an argument often advanced (14). The loss of tax revenue is probably not large, but the sum involved might be used more effectively as an incentive for Southern investment if it were employed in another manner.

4. The primary effect of the present agevolazioni is to reduce annual capital costs. This means that the agevolazioni provide greatest encouragement to the relatively capital-intensive industries, less encouragement to the industries whose largest cost is for labor and materials (including, of course, Southern-produced agricultural and mineral products).

We raise the question whether, in an economy the distinguishing feature of which is an abundance of labor and a shortage of capital, it is desirable to promote industrialization in a way which particularly stimulates the capital-intensive industries. A very different stimulus would be given by a system which subsidized or facilitated not capital investment but current output. For example, if the sums spent, or revenues lost, through the present system were devoted to a subsidy to new enterprises based on their current sales, the structure of incentives would be quite different.

To be sure this special encouragement to capital-intensive processes and industries may be desired or desirable, for example because South Italy is envisaged as an industrialized trading partner with the less-industrialized countries of North Africa and the Middle-East. Or, it may be argued that immediate employment considerations are less important than a more rapid rise in productivity; or, that capital-intensive investments will lead to a higher rate of future saving and investment, because less of the income from such investments goes to labor. On the other hand, a vigorously growing local market in the South may be an even more crucial prerequisite for

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(14) Even on psychological grounds, however, its importance can be questioned, since it is *clearly temporary*. To be sure, the other agevolazioni are temporary, too. But once the plant is built and the equipment is installed, the expectation of later withdrawal of the agevolazioni should be encouraging, because competitive investments made later will have higher costs. And if the loans at special interest rates can be repaid out of profits during the 10 or 15 year period, the expectation of withdrawal of the special interest rates should also be favorable to investment now. But the expected withdrawal of the profits tax exemption should lessen its incentive effect.

investment. Production that is labor-intensive is more likely to stimulate the internal market.

We cannot review all of the considerations involved in the active debate on investment criteria. We only point out something that may not have been obvious, namely, that the present form of the agevolazioni has a capital-intensive bias, while a subsidy based on current sales would not. We have not considered the political or administrative problems involved in such a subsidy, and they may be insuperable; we only suggest that consideration might be given to this possibility in any extension or revision of the agevolazioni. And it is our feeling that the present patchwork of provisions does need revision and simplification. It has grown up over the years with little plan or design. Perhaps one reason that the agevolazioni may have achieved less than might have been expected is that their structure is so complex that it is difficult for an enterpreneur (as it was for us) to see what their total impact may be.

Nevertheless, our calculations suggest that, when several of the agevolazioni can be combined, their total impact is rather sizeable, perhaps in excess of our initial expectation. It will be interesting to discover whether our Italian readers are surprised to find that they amount to so much; or whether their surprise is that they amount to so little.

Ann Arbor GARDNER ACKLEY - LAMBERTO DINI

Editorial post scriptum. *Information which has come to hand during the last few months makes it seem likely that in the North interest rates below 8 per cent might be more frequent than the authors of this article had reason to suppose at the time when they wrote it.*

In the first place, the applications for medium-term loans at the subsidized rate of 5 per cent have been very numerous in the North, where are situated the firms which have the most initiative and are therefore the quickest to take advantage of special facilities offered by the government. It is thus probable that loans at subsidized interest rates to entrepreneurs in the North may absorb a substantial proportion of the government contributions provided by Law No. 623.

In the second place, the special institutes granting medium-term credit to the smaller industrial firms will considerably expand their ordinary *operations*

Table IV bis

PROFITS BEFORE AND AFTER TAXES IN NORTH AND SOUTH, ON ASSUMPTION OF EQUAL SALES AND OPERATING COSTS

	Imported machinery			Domestic machinery		
	North	South		North	South	
		A	C		A	C
E. Interest rates 7% and 3%, gross return 250:						
1. Assumed gross return	250.0	250.0	250.0	250.0	250.0	250.0
2. Interest and depreciation (1)	136.8	84.1	92.9	119.0	70.4	87.3
3. Net profit before taxes	113.2	165.9	157.1	131.0	179.6	162.7
4. Income tax (2)	24.4	—	—	28.2	—	—
5. Net profit after taxes	88.8	165.9	157.1	102.8	179.6	162.7
6. Total investment (3)	1,474.6	1,259.6	1,349.6	1,342.2	1,139.2	1,320.4
7. Percent return before tax	7.7	13.2	11.6	9.7	15.7	12.3
8. Percent return after tax	6.0	13.2	11.6	7.6	15.7	12.3
F. Interest rates 5% and 3%, gross return 250:						
1. Assumed gross return	250.0	250.0	250.0	250.0	250.0	250.0
2. Interest and depreciation (1)	125.1	84.1	92.9	108.6	70.4	87.3
3. Net profit before taxes	124.9	165.9	157.1	141.4	179.6	162.7
4. Income tax (2)	26.8	—	—	30.4	—	—
5. Net profit after taxes	98.1	165.9	157.1	111.0	179.6	162.7
6. Total investment (3)	1,474.6	1,259.6	1,349.6	1,342.2	1,139.2	1,320.4
7. Percent return before tax	8.5	13.2	11.6	10.5	15.7	12.3
8. Percent return after tax	6.7	13.2	11.6	8.3	15.7	12.3
G. Interest rates 7% and 3%, gross return 400:						
1. Assumed gross return	400.0	400.0	400.0	400.0	400.0	400.0
2. Interest and depreciation (1)	136.8	84.1	92.9	119.0	170.4	87.3
3. Net profit before taxes	263.2	315.9	307.1	281.0	329.6	312.7
4. Income tax (2)	55.5	—	—	60.5	—	—
5. Net profit after taxes	207.7	315.9	307.1	220.5	329.6	312.7
6. Total investment (3)	1,474.6	1,259.6	1,394.6	1,342.2	1,139.2	1,320.4
7. Percent return before tax	17.9	25.1	22.8	20.9	28.9	23.7
8. Percent return after tax	14.1	25.1	22.8	16.4	28.9	23.7
H. Interest rates 5% and 3%, gross return 400:						
1. Assumed gross return	400.0	400.0	400.0	400.0	400.0	400.0
2. Interest and depreciation (1)	125.1	84.1	92.9	108.6	170.4	87.3
3. Net profit before taxes	274.9	315.9	307.1	291.4	329.6	312.7
4. Income tax (2)	59.2	—	—	62.5	—	—
5. Net profit after taxes	215.7	315.9	307.1	228.9	329.6	312.7
6. Total investment (3)	1,474.6	1,259.6	1,394.6	1,342.2	1,139.2	1,320.4
7. Percent return before tax	18.6	25.1	22.8	21.7	28.9	23.7
8. Percent return after tax	14.6	25.1	22.8	17.1	28.9	23.7

Notes: See Table IV.

in response to the forthcoming increase from 50 to at least 100 million lire in the ceiling on loans granted to a single firm. And the total charges for such operations are at present about 7 per cent. It might thus be realistic to supplement the authors' calculations by others based on the alternative hypotheses that the interest charges in the North are 7 and 5 per cent respectively. This has been done by way of illustration for Table III in a note, and for Table IV in an additional Table IV bis. The reader may do the same for the other tables.

Wages and Inflation (*)

I. Initial Assumptions

I shall not go into the logical relationship of wage rates to the other variables of the market economy. This relationship has often been analysed and I do not think it contains any controversial points of importance. Rather than repeat what is well known and uncontroversial, I intend in this paper to discuss some practical questions pertaining to wages and the control of the monetary system. Before entering upon this task, I shall, however, by way of summary state the assumptions on which the subsequent reasoning is based. For the sake of brevity I shall speak only of a rise in wages.

1. Money wages may be defined as the price of labour, but differ from the prices of goods in not having any equilibrium value. The price of potatoes, e.g., has an equilibrium value, determined by the condition that in a market economy demand must equal supply. The price of labour, wages (henceforth denoted by W) do not equilibrate demand and supply of labour. On the contrary, in a closed system and in the absence of government interference by price control, rationing, etc., the system may be in equilibrium with any value of W.

(a) The reason for this peculiarity is that in the absence of government interference a change in W means that the purchasing power of the wage-earning population immediately increases proportionately. Entrepreneurs are therefore able to raise their prices proportionately with sales remaining unchanged and with an increase

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(*) The present article is a paper read at the *Round Table on Inflation* of the International Economic Association held in Elsinore, 2-10 September 1959. The text will subsequently be published by Macmillan & Co. Ltd., London, in the International Economic Association's volume on Inflation which will give the record of the Elsinore Conference.

in profits proportionate to the rise in W. They will be induced to act in this manner, first, because their costs rise proportionately to W, secondly because market conditons are improved. In fact, with unchanged employment they will be unable to meet demand if they fail to increase prices proportionately. Thus a change in W tends to engender a proportionate change in P (the general level of prices).

(b) It is clear that when W and P are interdependent, and under certain conditions proportionate, W cannot equilibrate the labour market because demand for and supply of labour are dependent on real wages (W/P) and the real price of labour from the point of view of the entrepreneurs, which is also W/P. Whereas the entrepreneurs, on the basis of a given W/P, are able to determine the amount of labour they want to employ, it is not possible by the wage contract which determines money wages to adapt real wages so that the supply of labour is equal to demand. Thus in the market economy there is no mechanism determining employment. It has to be determined by outside interference, e.g. by credit and fiscal policy.

(c) So far I have tacitly assumed a closed system. However, what I have said applies to an open system (a system with foreign trade) on condition that there is equilibrium in the balance of payments. In this case, W in other countries being constant, the rate of exchange must be raised at least at the same rate as W if employment is to be maintained.

2. Thus W is not an endogenous variable of the system, it is an exogenous, specifically a political or institutional variable. It has to be fixed, directly or indirectly, by human action. It may be fixed by a government decree, providing for a fixed price of some commodity (e.g. gold) or service (e.g. an hour of a certain quality of labour) or by establishing a certain procedure for the determination of W (e.g. the Dutch system of wage control). W could also be fixed by contract between individual workers and employers or by the labour market organisations.

3. The *level* of W does not affect the equilibrium level of W/P and it is therefore indifferent to the equilibrium level of employment and total real income too. A change in the level of W is thus a purely monetary change, it expresses the change in P, due to mo-

netary changes as distinguished from changes in P due to technical changes, including blocking of production by monopolistic manipulations.

4. The *process* of change in W is not indifferent to W/P, employment and total real income. Such a process is what people really mean when they speak of inflation (deflation). However, it is not at all clear how and to what extent W/P and total real income will change in the course of the process. This is one of the problems which will be discussed later.

II. Inflation and real Income

It is hardly possible by empirical research to ascertain how a process of rising W affects total real income, the latter being determined by employment and the productivity of labour at given employment. I think that equally plausible arguments may be advanced for the view that an inflationary process leads to either lower or to higher total real income. I shall discuss both views later.

1. *Does inflation lead to a higher degree of employment?*

The prevailing school of thought holds the view that the process of rising W (inflation) promotes a higher average level of employment and real income, at least if it is of a moderate character, than would prevail if the level of W were stable. The reasoning is that with a stable W the incentive to consume and to invest, in short total demand, would not be sufficient to absorb the supply of labour. The expectation of rising W, on the other hand, would stimulate demand especially for durable commodities (investment demand and demand for durable consumers goods) because their cost may be expected to rise in the future (or to fall less) and that something could therefore be gained by accelerating buying.

It could be argued, it is true, that this would be a matter of interest rates. If, with a stable W, total demand were insufficient, interest rates could be lowered to such an extent that the level of total demand desired was achieved. To this it may be answered that for technical (or institutional) reasons it may be impossible to

establish a rate of interest low enough to maintain full employment when *W* is stable.

(a) *Is a rise in* W *in excess of the rise in average productivity critical?*

Specifically, it is often maintained that a rise in *W*, insufficient to absorb the rise in productivity, would be detrimental to employment because it would be associated with a falling *P*, which would induce a postponement of buying.

However, this element does not constitute any additional argument, because the stimulating effect of a rising *W* is independent of the movement of productivity. In fact, it only means that the greater the rise in *W*, the greater is the stimulating effect on total demand and employment. This stimulus does not begin to work just at the point when the rise in *W* exceeds the rise in productivity — it is there regardless of the rate at which *W* rises.

As evidence of the validity of the theory here discussed, reference is sometimes made to the development in the U.S.A. during the late twenties (the so-called New Era) and the subsequent collapse. During the period 1924-29 *W* was fairly stable in the U.S.A., whereas *P* showed a tendency to fall, at least from 1928, and this is taken as the cause of the collapse. I do not think that this evidence in any way supports the view in question, for the reason that the Federal Reserve System during 1928 introduced severe credit restriction, which may very well explain the slight fall in prices and the subsequent collapse as well. At any rate it would not be easy to prove that either the one or the other would have appeared in the absence of the restrictive credit policy.

If we take into consideration the fact that total demand may be increased by low rates of interest and by reduction in taxation, I do not think it is possible either on *a priori* grounds or by empirical evidence to demonstrate that a stable *W* would make it impossible or even difficult to maintain full employment.

(b) *Inflation and interest rates.*

Neither would a rising *W* necessarily lead to higher employment than a stable one. For the stimulating effect of a rising *W* might conceivably be neutralized by a correspondingly higher level of the rate of interest. If, for example, we consider the period from the middle of the nineties to the outbreak of the first world war, we find that a fairly constant level of *W* turned into a steep and

rather uniform rise and that, at the beginning of the period, the level of interest rates shifted upwards by a considerable amount (1).

Thus we are able to ascertain that there is some connection between the level of the rate of interest and the trend of *W*. But the evidence available is not sufficient to decide whether the adaptation of interest rates has fully compensated the effect of the movement of *W* on total demand.

The business cycle ran its course during the period of fairly constant *W* and falling *P* from the middle of the 70'ties till the middle of the 90'ties as well as in the succeeding period of rising W and *P* till the outbreak of World-War I. However, it may be that the peak employment left a larger margin of unemployment and that the troughs of the depression were deeper during the former than during the latter period. There is some indication that this was the case. At any rate, the two depression periods of the former period were not surpassed in severity until after 1929. But we must admit that many other factors than the movement of wages and prices may have played a part.

Perhaps we may be allowed cautiously to conclude that during the period in question there is no strong evidence in favour of the hypothesis that the rise in *W* led to an essentially higher level of activity than would have prevailed if *W* had remained fairly constant (2).

(c) *Inflation and economic activity under the present institutional framework.*

The case just discussed pertains to the institutional framework ruling during the gold standard era before World-War I. The probable connection between inflation and economic activity may be entirely different under the present institutional framework.

One of the characteristic features of the postwar political scene is that most governments consider inflation as the supreme evil, and they sometimes seem to be willing to sacrifice anything short of national existence to prevent this evil (3). As no government pos-

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(1) JØRGEN PEDERSEN, "Forholdet mellen Renten af Laan med kort og lang løbetid", *Økonomi og Politik*, 4. årgang 1930, p. 268 ff.

(2) For a study of the period in question cf. WESLEY C. MITCHELL, *Business Cycles*, New York, 1927, and JØRGEN PEDERSEN, *Arbejdslønnen i Danmark*, København, 1930.

(3) That is why inflation could be tolerated during a war.

sesses authority to control *W* directly to such an extent that a rise in *W* and in *P* could be prevented, they are inclined to resort to measures restricting economic activity, not only periodically when there is a threat of an excess demand for labour, but permanently, so that the average margin of unemployment becomes higher than would be the case in the absence of a rise in *W*.

Such a policy may be justified on the basis of two theories:

1) Wages do not concern the monetary authorities but are a matter of negotiations between the parties on the labour market. Inflation is reflected in the movement of prices. Prices depend on the quantity of money, which is controlled by the central bank. Therefore, whenever there is a rise in the price level (even if it is caused by adverse technical changes) the central bank will restrict credit.

However, in spite of the quantity theory of money, credit restrictions can only affect prices via a reduction in total demand, and as wages do not fall this spells unemployment.

Taking into consideration not only that the efficiency of labour tends to decrease with the number employed, but that the rate of change in W is positively correlated both with the movement of *P* and the degree of employment and that, at the same time, it influences the movement of prices, action against inflation on the above mentioned theory certainly leads to a low degree of employment, and the lower the employment the stronger is the tendency to rising *W*.

2) The other theory is that the rate of increase in *W* is strongly influenced by the degree of employment. Therefore, in order to combat inflation, the authorities, have to restrict employment. How much depends partly on the sensitiveness of wage rates to the degree of employment and partly on the zeal for combatting inflation.

It may be argued that, so far, there is little evidence that action has been based on this theory, for on the whole the average degree of employment in a comparable period after World-War II has been much higher than after World-War I, and, simultaneously, a high and sustained rate of inflation has been going on, whereas in the interwar period the fight against inflation led to highly fluctuating economic activity, terminating in a permanent depression.

This is true, but it may signify that so far the maintenance of this high degree of employment has been considered more important than preventing inflation, or perhaps it simply means that the various governments have not been aware of the connection between the degree of employment and inflation or have not been able to persuade the people that less inflation should be bought by sacrificing employment.

At any rate the fact that, in comparison with the inter-war period, the level of employment has been high, does not prove that it would not have been still higher if demand had not been curtailed in order to prevent or retard an autonomous rise in W (i.e. "cost-push" inflation).

The consciousness of continuous inflation due to an autonomous rise in W and the fear of the ultimate consequences have been growing recently. In addition, the international organisations such as the O.E.E.C. and the I.M.F., have persistently urged governments to take vigorous action against inflation, preferably by resorting to so-called monetary policy (i.e. credit restrictions), the effectiveness of which has allegedly been proved by age-old experience and praise has been lavishly bestowed upon those governments who have acted on the advice.

The theory developed in these circles to-day seems to be that restrictive action should be taken at an early stage of the revival from a recession, in order to prevent a boom. More and more governments, with the government of the U.S.A. leading the new crusade, are taking this advice against inflation.

It is obvious that this will lead to a lower average degree of employment than would have prevailed if the inflationary pressure had been less or entirely absent. In the U.S.A. the downward trend of the degree of employment is already clearly discernable. In 1958 the Western European countries experienced the lowest degree of employment during the post-war period, but it remains to be seen whether this will develop into a permanently lower degree of employment.

Thus there seems to be a good case for the view that there is a negative correlation between the pressure for increase in W and the degree of employment and total real income within the present institutional framework.

2. *Inflation and the productivity of labour*

The difficulty of ascertaining the relationship between inflation and productivity is greater than that of ascertaining the relationship between inflation and employment. Many problems are involved:

(a) *How does productivity vary with the degree of employment (in the short and in the long run?). Suppression of the rise in W and productivity.*

How does it affect productivity when the authorities adopt the policy of trying to suppress a rise in *W* by general demand-curtailing means (credit and fiscal policy), thus creating a low and fluctuating level of employment? We shall not here consider the effect on productivity of the shift to the left or the right of the curve representing the marginal productivity of labour under constant technical conditions, but *only* the effect of the policy in question on the position of the productivity curve. In other words, the question is: Does the degree of employment and its fluctuations affect the productivity curve, and if so, in what direction?

I think we must admit that we do not know much about it and that arguments could be advanced in favour of very different answers.

Thus it may be argued that when sales and profits are reduced because of demand-curtailing measures resulting in a fall in employment, firms will try to reduce costs, whereas assured profitability leads to indifference towards improved methods.

As far as I can see, however, this argument does not affect the average level of employment but only its fluctuations. And even so it may not hold. Amongst other things it must be taken into consideration that shrinking profits during depression deprive the entrepreneurs of the financial means to introduce improved methods requiring capital investment.

On the other hand if we are speaking of productivity at a certain "equilibrium degree of employment", I can see no reason why there should be any connection at all.

(b) *What is the effect on productivity of the (unsuppressed) rise in W?*

If we neglect the possible effect on the average level of employment, there can hardly be any doubt that the effect of a rise in *W* on productivity will be in the downward direction.

If the authorities adopt a policy of maintaining full employment, a balanced budget and equilibrium on the balance of payments, so that the whole system is currently adapted to the rise in W, the effect of a given rate of rise in W on productivity would be less than if the system of relative prices were distorted.

But let us consider the more realistic case: a continuous rise in W not fully compensated by a higher level of interest rates. This will distort the system (will make people act differently from the way they would have acted in the absence of inflation) and will lead to a rise of P in relation to W, i.e. a fall in productivity.

Now, this is likely to happen in several cases: (1) if interest rates are kept down by maintaining a permanent budget surplus; (2) if the rate in the rise of W is greater than expected; (3) if the rate of change of W accelerates so fast that the adaptation of other variables cannot take place, so that a general flight into goods develops. Stocks of all kinds of goods are accumulated, consumption out of given income is increased, the supply of labour is decreased, and people turn to bargaining in kind: division of labour deteriorates; (4) if countries in which W increases more than the average increase for the whole trading community fail to adapt the rates of exchange and resort to import restrictions, import duties and export subsidies, which distort production and foreign trade.

Most of those cases are liable to occur. In any case, there is a greater likelihood of one or more of them becoming active the stronger is the inflationary tendency and the more the authorities try to combat inflation by interference with the spontaneous adaptation of the system and without possessing the power to control wages directly.

However, post-war experience seems to indicate that a considerable inflation combined with some degree of distortion of the system could take place without very damaging effects on total real income. It is true that it is impossible to measure how real income would have developed in the absence of inflation and at the same degree of employment, but in comparing the countries of Northern and Western Europe it is not possible to find any clear correlation between the degree of inflation and the development of real income, and there can hardly be any doubt that if a lower degree of inflation had to be bought by maintaining a lower degree of employment, the outcome, as far as real income is concerned, would have been in favour of letting inflation run its course.

This could with certainty be inferred from the experience of the inter-war period, in which the attempts to reestablish the pre-war price level and gold parity had devastating effects on employment and in addition caused a couple of revolutions.

In trying to infer anything from the post-war period it should be kept in mind, however, that uninterrupted inflation has not been allowed in any country; it is possible that had this been the case, inflation might have accelerated to such an extent that the case mentioned above under (3) would have developed.

III. Measures for the control of wages

I have said that the control of inflation, or in more precise terminology of the monetary system, is equal to a control of *W*. This is true regardless of the action taken by the authorities and of the theories on which it is based. Thus it was as true under the rule of the quantity theory and the gold standard as it is under a theory of functional finance.

1. *Effect of the structure of the labour market*

I have tried to establish that whether *W* is fixed by individual contract or by collective bargaining, employment is determined by total demand and not by the degree of competition on the labour market. This does not mean, however, that the structure of the labour market is without significance with respect to the behaviour of *W*.

If workers are unorganised or if trade unions do not play any significant part in the determination of wages, the development of *W* will differ from the development under a system of prevalent collective agreements. In the first system *W* is much more closely tied to the demand for labour than under a system of strong unions.

In his *General Theory of Employment, Interest and Money*, J. M. Keynes speaks of semi-inflation, meaning by that term the rise in wages which occurs during an increase in economic activity and before full employment is attained, because in some branches " bottle-necks " will develop. As full employment is approached, more bottle-necks will emerge and consequently more wage increases occur, until full employment is reached. If, in this situation, there is still a surplus demand for labour, according to Keynes wages

increase without limit until the surplus demand is removed, and we have what Keynes in 1936 termed " true " inflation.

It is worth noting that both kinds of inflation are " demand induced ". Thus in 1936 Keynes, in spite of the fact that he was living in a society in which the labour market was highly organised, did not have sufficient imagination to envisage a so-called " cost-push-inflation ".

Presumably the Keynesian theory fits the facts fairly well in a society where labour organisations are weak or absent. But if trade unions are very strong, as in modern societies, wages will behave differently. In this environment we shall find that collective claims for wage increases will be advanced at the renewance of every wage contract, almost regardless of the state of the labour market. The contracts will normally either be rather short-term or contain provisions for conditional termination of the contract or automatic cost of living clauses (4).

(a) *The influence of the degree of employment.*

However, to demand higher wages is not equal to obtaining them. If the government (including the central bank) is in the habit of controlling the balance of payments by means of changes in the level of employment or if a government has adopted the policy of combatting inflation (defining inflation as a rise in P), for whatever reason, by so-called monetary policy, i.e. credit policy, and thus creating unemployment, the employers will resist wage claims when employment is subnormal, and the more firmly the lower is the degree of employment. The leaders of the unions will yield somewhat to this resistance, because they feel that the result of forcing through a greater rise will lead to too great unemployment.

If, on the other hand, the government follows a policy of full employment, the resistance of the employers to wage claims may be very weak, but just for this reason the trade union leaders will be comparatively moderate in their claims, realizing that an increase in W promptly leads to higher P. However, the experience of the

(4) Some evidence of this thesis could be found in my book: *Arbejdslønnen i Danmark under skiftende Konjunkturer i Perioden ca. 1850-1913*, København, 1930. It is remarkable that there seems to have been very little rise in wages in U.S.A. during the period 1924-29, which is considered to be a boom period. This indicates that the bottle-neck stage had not been reached. The behaviour of W under the New Deal corresponds to the thesis, with the reservation that the organisations were politically supported.

post-war period is that some concessions to wage claims are always made, even during depression, and automatic adjustment provided for in the collective agreements has led to further rise in W (5).

It must be admitted that the depressions experienced after World-War II have been mild by a pre-war standard. We do not know whether it is possible to stop increases in W *by unemployment* or at what level unemployment has to be in order to prevent a rise in W. In Denmark the trade unions succeeded in obtaining substantial rises in W every year from 1934 to the outbreak of World-War II, in spite of the fact that the yearly average of unemployment never fell below 8 per cent; after the war wage increases have been negotiated at every renewance of the agreements, amounting to 2 per cent as a minimum and as a rule considerably more. In addition, there has been provisions for conditional automatic rises, and this has occurred in spite of the fact that the monetary policy has degenerated into the gold-standard model and that the margin of unemployment has never been below a yearly average of 8 per cent.

In conclusion, all the available evidence indicates that it may not be possible to prevent the continual rise in W by keeping a low degree of employment and that in terms of employment it may be a very costly affair, to keep the average annual rise in W below, say, 5 per cent.

(b) The next question is how much W can be expected to accelerate when demand enters what we may term the " bottle-neck-area ". In this area two forces are at work, viz. union pressure, which we have found to be a function of the degree of employment, and partial excess demand, which according to Keynes was the only source of rise in W before the attainment of full employment. The evidence available is not sufficiently clear for any except a tentative answer to the question (6).

There has been a considerable difference between countries with respect to the degree of employment. During the whole post-war period until 1958, the U.K., Sweden, Norway, The Netherlands and Switzerland have maintained a level of employment over long

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(5) A. J. Brown, *The Great Inflation 1939-51*, Oxford University Press, 1955, Chapt. 4. Cf. A. W. Philips, " The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861-1957 ", *Economica*, 1958.

(6) Bent Hansen and Gösta Rehn: " On Wage-Drift. A Problem of Money-Wage Dynamics ", in *25 Economic Essays in Honour of Erik Lindahl*, 21st November 1956.

periods, bordering on full employment in the literal sense of the term. At times there has perhaps even been a genuine excess demand for labour. Other countries of a similar cultural pattern, such as Denmark, Belgium, W. Germany, Italy and the U.S.A., have periodically maintained a very high margin of unemployment and have never attained anything near full employment for any sustained period.

Unfortunately it is difficult, if not impossible, to make a comparative study of wage rates, because the employers to an increasing extent pay part of the wages into so-called welfare funds (fringe benefits, social security contributions, etc.) so that the rates currently published, representing that part of wages which is paid in cash to the workers, to a diminishing and varying degree, represent the cost of labour to the employer. There are other reasons, too, which make a comparison difficult.

It is, however, possible to establish that wage rates in countries having an extremely tight labour market have not risen much faster than in countries with a considerable margin of unemployment, and particularly that there is no sign of extreme acceleration of wage rates seriously endangering the monetary system in the former group of countries.

2. *The efficiency of measures affecting total demand*
(Credit and fiscal policy).

It follows from what has been said above that as long as total demand for labour does not exceed total supply retardation of the rate of increase in W must be bought by sacrificing employment and real income. On the other hand, in the case of excess demand (apart from direct control of investment), credit and fiscal policy are the only means of preventing an unlimited rise in W and thus preventing a deterioration of the monetary system.

However, experience seems to indicate that it is possible for short periods to balance on the edge of excess demand, without the appearance of a strong acceleration in the rise in W, and that "bottlenecks" are dissolved by an automatic acceleration of the mobility of labour in a period of rising demand for labour short of general excess demand.

3. *Retarding the rise in W through persuasion*

Although it is still the prevalent opinion among bankers and politicians that prices are determined by the quantity of money, the concept of "cost-push-inflation" is gaining ground increasingly. As a consequence politicians and economists issue appeals to organised labour, in the interest of general welfare, to moderate their wage claims. At the same time firms and corporations are exhorted to refrain from passing on the wage increases to prices. Could such admonitions be expected to be worth the effort or should they be considered as merely empty words?

As far as the firms are concerned, it ought to be obvious that unless they are charging prices which exceed long term average cost, there is no alternative than to pass on the wage increase in full or to see employment reduced. If, in fact, excessive prices have been charged, their removal must necessarily be a one-time measure; having once been performed, it could not prevent or retard the passing on of wage increases. It is not possible to ascertain in how far, if at all, the degree of monopoly has been affected by the above mentioned admonitions. I submit that it has not been affected at all.

Concerning the behaviour of organised labour, the matter has to be left undecided too. My own view is that government declarations have been futile.

There are, however, other forms of persuasion. The trade union leaders and the more enlightened part of the trade union membership may, themselves, have realized that without sacrificing employment it is impossible to increase real wages by increasing W. The majority of the membership, supported perhaps by candidates for leadership, fail to see the connection between wages, prices and employment. They hold that a rise in wages could be paid out of the profits of employers and therefore insist on continuous wage claims.

Here the leaders have a great task of persuasion and education. I believe that in many cases they are working very hard on this problem and not always without success. This is, I think, one of the most important explanations why wages have not risen more than has been the case in those countries where the labour-market has been extremely tight and why the emergence of bottle-necks has not led to an explosive rise in W.

It is an extremely interesting question whether a policy of combatting inflation by means of restrictive credit and fiscal policy, thus creating fluctuations in activity and keeping a considerable margin of unemployment, is in the long run more effective in curbing inflation than maintaining full employment and leaving inflation to run its course.

In the latter case, we might perhaps temporarily get a faster rate of inflation, but the trade union leaders and their members could hardly fail to realize, that they do not gain anything by pushing up W. In the first mentioned case, this is not so clear, for the reason that the fall in the level of employment does, in fact, make a higher W/P possible, especially during depressions, for those workers remaining in employment.

4. *Government control of wages*

We have seen that the control of money is equal to the control of W. So far we have discussed measures for exercising this control. Those measures have had in common that they were of an indirect nature. It would, however, seem more rational to fix W directly by government decree.

During many decades governments fixed the price of a commodity, gold. This was an indirect way of fixing W and it proved to be a very irrational method, leading to numerous serious repercussions, detrimental to human welfare and finally resulting in the collapse of the whole system. Why not fix the price of a certain quality of labour and thus adopt a wage standard instead of a gold standard?

It is generally agreed that the general level of W does not affect relative prices or the allocation of productive factors and that, in the absence of further interference, prices readily and without friction adapt themselves to changes in W. A "wage-standard", therefore, would seem to be the ideal method of controlling the monetary system.

However, apart from the difficulties involved in defining a definite quality of labour, it will prove technically difficult, if not impossible, to carry out such a policy. The main reason for this is that the structure of wages has to be continually adapted to market conditions for the various qualities of labour. Fixing the price of a definite quality, therefore would imply that the price of some

qualities would have to rise and others would have to fall, and such a reduction in wages would be very difficult to effect.

For administrative reasons, therefore, the program has to be somewhat modified. The adaptation of relative wages to market conditions should be allowed to take place solely by a rise in wages for the qualities to which demand has shifted, leaving wages constant for the qualities subject to decreased demand. At the same time demand for labour should be kept equal to supply as nearly as practically possible by means of credit and fiscal policies.

If such a modified " wage-standard " were adopted by the whole international system, it would require that exchange rates were adapted to changes in relative labour productivity. If, on the other hand, the system was limited to a single country, exchange rates would also have to be adapted to changes in the relative wage level between countries. This would not cause difficulties; determination of exchange rates could be left to market forces. Wage rates being under control, speculation would keep the fluctuations of exchange rates within narrow limits (7).

The system would also overcome what some economists consider a difficulty, viz. a falling price trend. For the rising trend of wages, due to the adaptation of relative wages, might very well compensate for the general increase in productivity.

In principle there could hardly be any objections to such a system. It may, however, encounter serious political or administrative difficulties. To my knowledge there is only one Western country in which wages are subject to government control, viz. The Netherlands. In that country the system enjoys the support of the leading trade unions, which realize that W/P could not be raised by raising W if full employment is to be maintained (8).

In other countries neither the trade unions nor the people in general are so enlightened, and it is obvious that the system could not be forced through against the will of such a large section as the wage earning population. Therefore, until such enlightenment

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(7) It should be added that if full employment, equilibrium of the balance of payments, constant duties and export subsidies and absence of quantitative control of trade is to be maintained, exchange rates must be left free to adjust themselves, too. This will prove a very real problem in connection with the so-called European Economic Community.

(8) Cf. Bert Zoetewij, " National Wage Policy: The Experience of the Netherlands ", *International Labour Review*, Vol. LXXI, 1955.

has become general, the system of governmentally controlled wage rates could not become general. In the meantime it would be necessary to live with a considerable amount of inflation.

5. *Inflation and unemployment*

It has been argued that, taking maximum real income as the supreme goal, inflation, at least when it exceeds a rate of 2 or 3 per cent per year, is an evil. Experience indicates that the rate of inflation could be somewhat curtailed by creating periodical depressions and by keeping a margin of unemployment even at the peak of economic activity. As unemployment from the point of view of maximizing real income is also an evil, this leaves us with a choice of two evils, and the objective, therefore, must be to find the combination of the two that minimizes the total evil.

Now, as I read the experience available, virtually full employment could be maintained within a rate of inflation which is so moderate that it does not seriously hamper production. Moreover, the distributive effects, which are often cited as a great evil, would be very small if the authorities refrain from interfering with the price system in order to keep interest rates or prices down. At the same time, the chance is that the absence of such interference may have a healthy effect on the interest labour may have in raising wage rates, at least in the longer run. For it would serve to educate even the dullest to realise that nothing could be gained by increasing W.

My conclusion is, therefore, that it does not pay to sacrifice employment in order to curb inflation. Governments should concentrate their efforts on maintaining full employment, see to it that excess demand for labour which may develop is speedily removed, mainly by means of credit policy, and leave the degree of inflation to the state of education of the people, which of course should be promoted by every means available.

Aarhus JØRGEN PEDERSEN

Dualism in Economic Growth (*)

Introduction

Current economic literature dealing with problems of growth has only been concerned, until recently, either with advanced economies — well ahead in the process of capitalistic development, with high incomes and productivity — or with underdeveloped economies, where growth has not yet begun or is just beginning. Accordingly, the models purporting to explain the working of the dynamic process are so built as to conform to one of these two patterns.

There are other economies which cannot be reduced to either of the two types mentioned above. Such economies have undergone a process of non homogeneous growth, in the course of which a relevant part of the system has lagged far behind the other. As a result two sectors have come to coexist: an advanced sector, where the degree of industrialization is high, factors of growth are in operation, productivity and wages increase, and *per capita* incomes are high, or at least well above a certain minimum; and a backward sector, where income *per capita* is well below that minimum, productivity is low and stagnant, techniques of production are very primitive, and where unemployment and underemployment are persistent features. For defining such a situation the term " dualism " has been adopted.

Dualism is a paradox, in that a sector remains backward even though the economy as a whole is growing and the overall rates of capital accumulation and of income growth continue at a high level: growth taking place in a part of the economic system does

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(*) An earlier draft of this paper has been presented at two seminars of the Istituto di Economia e Finanza of the University of Rome. I wish to express my gratitude to Prof. Papi for the stimulating comments he made both on these occasions and on reading a later version of the paper. I am also indebted to Dr. A. K. Sen of Trinity College, Cambridge, for penetrating criticisms and for his many suggestions for improvement, and to Prof. Sylos Labini for discussion of some points of the paper.

not benefit the remainder; and the excess labour force in one sector is not absorbed by capital accumulation in the other. Hence the problem arises of finding the causes of this distortion in the growth process through an analysis of the factors governing the distribution of the increments of income between the two sectors.

Italy is the best known and most typical example of an economy affected by dualism. At the same time the pattern of Italian development seems to provide the evidence that no satisfactory explanation of dualism can be obtained by recurring to the approach followed in modern theories of development concerned with underdeveloped countries. In these theories, which stem directly from the classical long-run analysis, the scarcity of capital is emphasized as the main obstacle to development, and the main issue consists in finding the way to provide the economy with an initial amount of savings sufficient to set the development process in motion (1). But in a dual economy of the Italian type the problem does not consists in a lack of the savings necessary to give the initial push to the system: high overall rates of growth in income and investment and a high share of investment in national income can be associated, as it has been the case in Italy in the past twelve years (2), with the persistence of dualism — the excess labour force being left unemployed or underemployed and the gap between two parts of the economy remaining unbridged.

Though the set of hypotheses advanced for explaining the absence of growth, and relevant for economies where development has not yet begun or is just beginning, cannot be used for a *diagnosis* of the causes of uneven growth, it may be thought that the same models of development are more useful in discovering some *therapy* against dualism. In the most representative of such models, that

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(1) Hence in this line of thought investment and consumption are assigned a contrasting role: unlike in the Keynesian world, where they act complementarily in determining the level of effective demand and the level of income, and, through the latter, the amount of saving required, in the classical long-period world investment and consumption are in a rival position, since an expansion of any of the two can take place only at the expense of the other.

(2) And not only in the past twelve years. On the high rates of growth attained by the Italian economy after the unification, see C. Clark, "The Development of Italian Economy", *Banca Nazionale del Lavoro Quarterly Review*, No. 30, July-September 1954; V. Paretti and C. Bloch, "Industrial Production in Western Europe and in the United States 1901 to 1955", *ibid.*, No. 38, September-December 1956.

On the persistence of unemployment and regional inequalities with high overall rates of growth, see G. Di Nardi, "Le politiche di impiego dei mezzi per lo sviluppo economico", *Rivista di Politica Economica*, October-November 1956, pp. 1012 and 1015.

put forward by Professor Lewis in 1954 (3), development with unlimited supply of labour, once started, appears to be an automatic process: with an entrepreneurial class saving most of the profits, if wages remain constant over time, until when labour becomes scarce, the reinvestment of the saved profits insures a progressive widening of the capitalistic sector and, if the rate of accumulation is sufficiently high relatively to the rate of growth in population, the gradual absorption of the excess labour force; rising wages, on the other hand, would cut down the investible margin (on the plausible assumption that practically all wages are consumed) and thus reduce the rate of expansion of employment. This argument has been applied, with some qualifications, to the case of a dual economy: if what is considered a high level of investment does not suffice, for some reason or other, to absorb the excess labour force and to insure an even development, an even higher level is needed: and the latter can only be achieved if consumption, and therefore wages, do not rise over time and a certain rate of growth in income is maintained (4).

Still, even if this line of thought is accepted, it is evidently of paramount importance to inquire into the reasons why a high rate of accumulation is not followed by an expansion of the capitalistic sector sufficient to absorb the excess labour force. A contribution in this direction, representing an independent approach to the problems of a dual economy, can be found in a recent article by Mrs. Vera Lutz (5), purporting to provide a general diagnosis of the causes of dualism as well as a model of even growth for a dual economy. Mrs. Lutz recognizes that the *size* of aggregate investment is only a part of the story, and directs her attention to the factors determining the *pattern* of investment, on which the

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(3) W. A. Lewis, "Economic Development with Unlimited Supplies of Labour", *Manchester School*, May 1954; also ID.: "Unlimited Labour: Further Notes", *Ibid.*, January 1958.

(4) This approach is followed to a certain extent in the Vanoni Scheme and also in a recent report of the President of the Comitato per lo sviluppo dell'occupazione e del reddito, Professor Saraceno (Presidenza del Consiglio dei Ministri, Comitato per lo sviluppo dell'occupazione e del reddito, *Riconsiderazione dello "Schema Vanoni" nel quinto anno dalla sua presentazione*, Rome, 1959).

(5) Vera C. Lutz, "The Growth Process in a 'Dual' Economic System", *Banca Nazionale del Lavoro Quarterly Review*, September 1958. See also, by Mrs. Lutz, "Some Characteristics of Italian Economic Development, 1950-1955", *ibid.*, No. 39, September-December 1956, which contains an empirical analysis of the pattern of investment and of growth in output in recent Italian development.

effects of investment on employment depend. The organic composition of capital at any moment of time and its changes over time — and therefore the level and the dynamics of employment — are mainly determined by the level of wages and by its dynamic behaviour: since a rise in wages brings about a fall in employment through an increase in capital intensity, the wage rate can be so high at any moment as to prevent the full employment of the labour force; and wages rising over time are associated with an increasing capital intensity of production processes. With an increasing capital-labour ratio and increasing capital requirements per worker employed, even a very high rate of accumulation may reveal itself insufficient to expand employment and to eliminate dualism.

While the type of analysis of development theories mentioned above is of classical derivation, Mrs. Lutz' analytical approach can legitimately be labelled as neo-classical, since she resorts to propositions and tools of analysis of unmistakable marginalistic brand. However, her conclusions concerning an even development of the system, though founded on different grounds, are substantially the same as those reached by the analysis of classical type. Capital accumulation, fed by the existence of a capitalistic surplus made available for reinvestment at the end of any productive period, insures the widening of the capitalistic sector and the absorption of the excess labour force at a constant or slowly rising capital-labour ratio, provided that the wage rate remains constant over time. Rising wages prevent a smooth working of the mechanism: and in this connection emphasis can be laid on the resulting curtailment of the investible margin or on the resulting increase in capital intensity.

Thus, in approaching the problems of a dual economy, we are confronted with a specific diagnosis of the emergence and the persistence of dualism, as put forward in Mrs. Lutz' theory; and with a therapeutic suggestion as to the possibility of attaining an even development and of eliminating inequalities between sectors of a system, which is common to both the general theory of development and to the particular theory of Mrs. Lutz, and consists essentially in a high rate of accumulation with wages constant.

The purpose of this paper is twofold. In the following part we shall move some criticisms to Mrs. Lutz' diagnosis of dualism, trying to show that the emphasis laid by her on the wage level as a cause of dualism is not justified and to point out some flaws in

the mechanism through which the wage level should affect employment. The main part of our analysis is to be found in part II. There we shall suggest an alternative and more general explanation of dualism in economic growth, from which an implicit refutation will emerge of any therapy founded exclusively on capital accumulation and on the constancy of wages: for in our model we shall try to show that under certain conditions dualism can arise independently of the behaviour of wages.

It must be said at the outset that our analysis does not provide anything more than a set of hypotheses, i.e. a model for explaining uneven growth. However, if the approach followed here is correct, the study of dualism in economic growth will acquire a somewhat broader scope, for it will appear that its relevance is not restricted to a few actual cases — and in particular to the Italian case — which, though important, are of scarce interest to the rest of the world. The limitations conditioning the working of even growth in an economy at initial stages of development are shown to apply to any development model which relies exclusively on initial capital formation and on successive capital accumulation as main factors insuring that growth of the desired size and pattern can take place. Moreover the emergence of dualism will appear to be more than a pure possibility, as far as economies which have started their growth recently are concerned. In our concluding remarks on the historical and empirical relevance of the proposed explanation we shall argue that dualism is not simply an accident in the economic history of some countries, but an immanent — though possibly avoidable with adequate policy measures — obstacle to development, due to factors which were not working (or were not powerful enough) in the past processes of capitalistic growth, but which are present to-day because the conditioning data have changed: and, we shall suggest, there are good reasons to suppose that dualism, while not a feature of past growth of capitalistic economies, constitutes an inherent danger for economies which are now at initial stages of development.

I. A Critique to the View that Imperfections in Factor Markets Are an Independent Cause of Dualism

Here we shall first present a brief summary and then attempt a critical analysis of Mrs. Lutz' model.

1. *Mrs. Lutz' Model of a Dual Labour System*

Three parts should be distinguished in Mrs. Lutz' analysis: the first shows how dualism can originate; the second is an analytical description of the distortions of a dual economy; in the third a growth model for a dual system is sketched.

1) The proposition underlying the first part of the analysis is that, granted the variability of factor proportions, and with given technical conditions and given capital, employment and the degree of capital intensity depend exclusively on the prevailing wage rate.

The level of the real wage rate, Mrs. Lutz argues, does not affect the capital-labour ratios directly, " as the 'Classics' first supposed, and as most of the current literature continues to assume ", but " indirectly via its influence on the demand for investment funds and hence on the interest rate " (6). A rise in wages causes an immediate fall in aggregate employment and output: owing to this a smaller amount of capital than before is required to maintain a given capital intensity. Thence a fall in the interest rate is bound to follow, so that replacement funds will be invested into more capital intensive industries and methods: thus the degree of capital intensity will be different from that prevailing with the previous level of wages and employment.

As labour is always employed up to the point at which its marginal (value) productivity equals the wage rate, in a unified wage system, with a given marginal productivity curve of labour, a full employment level of wages, W, would exist at which all the existing labour force could be employed; and any wage higher than that would cause some unemployment.

In a dual labour system labour is, *ex hypothesi*, divided into two groups. Workers employed in large firms are under the protection of unions, which impose a contractual wage, W', higher than W. Workers of the other group (consisting of self-employed and family labour or of hired labour attached to very small units, which escape the observance of collective contracts) are not unionized and are willing to work for less than the contractual wage. This differentiation affects the size of the firms, insofar as it opens the alternative possibility either of operating on a large scale, paying

(6) " The Growth Process, etc. ", *cit.*, pp. 288-289.

the contractual wage, or of keeping production in small units, paying a lower wage. Productive activities which can only be operated on a large scale will employ only high wage labour, while those where the absence of economies of scale makes small size profitable will employ only low wage labour. But there are also productive activities where there is flexibility with respect to scale: here the size of the units depends on whether lower wages can more than offset the disadvantages of small scale, and the proportion of small scale units to the total will be greater than that " normal " in a unified wage system.

Thus two sectors come to coexist, with units of different size, dualism in production methods and different degrees of capital intensity and productivity within the same industrial group. The distribution of the labour force and the allocation of capital between the two sectors, as well as the average wage level in the small scale sector, depend on the level of W' in the large scale sector and on the technological factors, which condition the convenience of keeping small or expanding. The low wage sector provides a sort of refuge for the labour force which cannot be employed at the wage rate prevailing in the other sector: therefore in a dual system at any wage W' employment, though less than full, is greater than it would be in a unified wage system with the same wage rate.

2) The situation of an economy with a wage rate set above the full employment level and a dual labour system can be compared with that resulting from a unified wage system with the wage rate at the full employment level.

Total income is lower, owing to the distortion in the size structure of the producing units. The level of employment is lower in the large scale sector — the lower, the higher the contractual wage — and higher in the other sector. The rate of interest is lower, because of the loss in productivity due to size restraint. Labour employed in the large scale sector uses more capital and has a higher productivity than in the " normal " situation, while capital-labour ratios and productivity are lower in the other sector. As output and employment in the large scale sector are lower, concentration and the degree of monopoly, and therefore the level of profits, are higher than in the " normal " situation. Finally, as modern technical conditions tend to limit flexibility with respect to scale, " the bulk of the 'excess' of small units is likely to be in agriculture " and " agricultural employment is swollen at the expense

of industrial employment" (7). Thus, while workers of the large scale sector, capitalists enjoying a high degree of monopoly and landowners benefit from the situation, the "unprotected" labour group, suffering of an abnormally low productivity, is the main victim of the distortions of dualism.

3) In a growth model of a dual economy, Mrs. Lutz argues, labour and at least two income and employment aggregates should be considered. Accordingly she examines the influence of the wage policy followed in the large scale sector on the type of development process induced by capital accumulation and considers two extreme cases.

If wages are kept constant in the large scale sector for a relevant period of time, capital accumulation, by shifting up and to the right the marginal productivity curve of labour, allows employment to increase in that sector. Thus a gradual absorption of the excess labour force into the advanced sector takes place, while at the same time easier credit conditions allow the capital-labour ratio and productivity to rise in the backward sector. The final effect "would, if the wage truce lasted long enough and if capital accumulation lasted long enough, be to close the income gap between the two sectors so that a unified wage system would be reached" (8).

If, instead, wages in the large scale sector rise, the expansion of employment following capital accumulation is much lower than in the previous case: wages might even rise just enough as to prevent any absorption of unemployment, so that all the new investment would be devoted to raising the capital-labour ratio. In this case all the benefits of capital accumulation would be limited to the high wage sector. With any of these two development processes, a different rate of increase in income would be associated: it would be higher in the former case, because of the lower incremental capital-output ratio and because of the larger absolute volume of savings which would result.

2. *A Critique to the Model*

Thus Mrs. Lutz' explanatory hypothesis appears to rest on two sets of theoretical propositions and assumptions — one showing how

(7) *Ibid.*, pp. 299-300.
(8) *Ibid.*, p. 313.

dualism arises and the other accounting for the persistence of the phenomenon.

As regards the former, the fundamental proposition is that, with given capital, employment and capital intensity depend on the level of wages: therefore there exists a level of wages capable of insuring full employment, and at any level higher than this capital intensity is higher and the volume of employment lower. This one-way relationship rests in turn on the assumption that wages — or rather the wage policy of Trade Unions — is an independent and exogenous variable of the system, so that changes in capital intensity are mainly wage induced. Then, if we further *assume* that Trade Unions do actually press for a wage higher than the full employment wage rate and that a lower wage is paid and accepted in the rest of the economy, we have dualism arising, with all the consequences analysed by Mrs. Lutz.

The persistence of dualism is also explained with reference to the behaviour of the wage rate. If the wage rate were constant, capital accumulation would gradually eliminate unemployment; but at any rate of capital accumulation there corresponds a particular rate of rise in wages at which unemployment is not absorbed. Therefore, if capital accumulates and employment does not increase or increases slowly, this is because in the course of the process wages rise too fast.

In this section we shall only be concerned with the first proposition: an implicit criticism of the second will result from the alternative explanation put forward in the following part.

Mrs. Lutz' account of the origins of dualism seems to hurt against three groups of difficulties, of increasing order: 1) if any relationship is to be established between the level of wages and capital intensity, this cannot be done in the way proposed by Mrs. Lutz; 2) even granted, however, that some such relationship does exist, the very assumptions on which it is founded are questionable, and its scope is limited to the analysis of equilibrium situations; 3) quite apart from its formal consistency, the relationship between wages and employment at any moment of time has scarce relevance in explaining a dynamic phenomenon such as dualism.

1) Mrs. Lutz' analysis appears to be founded on a short-run production function of the traditional type, in which the amount of

capital is given and output and employment vary. From it a marginal productivity curve of labour is derived, in order to show the equilibrium level of output and employment, at which the marginal productivity of labour equals the current wage rate. A rise in wages causes a primary fall in output and employment, but is not sufficient by itself to bring about a change in capital intensity, because, Mrs. Lutz argues, it also induces a rise in the price of capital goods: however, since output has fallen, there will be, at the prevailing capital-output ratio and with the given capital, an excess supply of capital; this will bring down the interest rate, and firms will invest their replacement funds in more capital intensive techniques.

Now, even if we assume that, following the rise in wages, a primary fall in output and employment occurs (independently, it should be noted, of changes in capital intensity) some difficulties appear, owing to the fact that, while we are dealing with an aggregate of firms, we are not told how the fall in output is distributed among different firms, and therefore how it is reflected in the marginal productivity curve of labour and how it affects the supply of capital. The initial fall in aggregate output can be caused either by the elimination of the marginal (least efficient) units of production, or by a proportional fall in any firm's output, or both by the elimination of some firms and by the reduction of other firms' output. The second possibility should be ruled out on grounds of realism, because it presupposes that cost conditions are the same for all the firms. As far as the third possibility is concerned, the extent to which output and employment are going to be reduced in intramarginal firms depends on the shape of the cost curve and of the marginal productivity curve of labour: if some discontinuities are present, so that — as it is often the case in modern firms — no more and no less than a certain number of men is needed to man any piece of equipment and all the teams of men working at equal pieces of equipment have equal productivity, then the productivity of labour is constant (9) and there is no reason why production should be cut. The most plausible possibility is the first one, i.e. that of marginal firms leaving the market. But in this case two consequences follow. First, since the distribution of capital among

(9) More exactly, it is constant for labourers grouped into teams, while it falls to o for any number of labourers lower than that required to work a machine.

the producing units alters, and since it is to be believed that the marginal productivity curve of labour shows the intensive margin, taking as given not only the quantity of capital but also its distribution among firms, the position of the system is left quite indeterminate. Second and more important, the machines of the marginal firms which have been eliminated will probably be scrapped before the end of their technical life span, and therefore a destruction of capital will occur (10).

This destruction of capital should be considered in the context of Mrs. Lutz' argument. Indeed, when we pass from the short run — in which the given capital is embodied in machines and there is only a primary fall in output — to a Marshallian long run — in which we have to deal with a new incarnation of capital — more flaws appear in the mechanism which should insure the increase in capital intensity via a fall in the rate of interest brought about by a fall in output, and therefore in capital requirements, relatively to the given supply of capital.

Since, owing to the rise in wages, the price of capital goods has risen, as Mrs. Lutz herself admits, and since the amortization funds are those adequate to a past situation with lower prices of capital goods, one would think that the demand for finance of firms left in the market should increase, even if the degree of capital intensity is not going to be altered (11). Nor can we expect these higher requirements to be matched by capital left free after the primary fall in output: the elimination of marginal firms results, as we have seen, in a partial destruction of their capital; and, if anything (12), only their amortization funds are left available for reinvestment.

Rather it might have been argued that a rise in wages causes a fall in the present and future quasi-rents which can be obtained

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(10) It would not be so if machines left idle by some firms were bought by other firms: this is clearly not the case when the machines in question are those used by the least efficient firms, now eliminated from the market.

(11) The rise in the price of capital goods is the result of the so-called Wicksell effect. At an unchanged output of the firms left in the market, an increase in capital intensity has a *fortiori* the same consequence: for the same output capacity, a machine employing less labour costs more than a machine employing more labour (cf. J. Robinson, *The Accumulation of Capital*, London, 1956, p. 102).

(12) Also the amortization funds are likely to be absorbed in the process of liquidating the business and repaying creditors.

from a machine, and therefore in the rate at which the quasi-rents should be discounted in order to bring their aggregate value into equality with the cost of the machine (13). But in any case, so long as we remain confined to the static and short-run method of analysis employed by Mrs. Lutz to obtain the desired relationship between wages and capital intensity, we are in a tangle from which it seems rather difficult to get out. Nor is it our concern to find here whether there is a more satisfactory way to demonstrate such a relationship (14): for the latter, as we shall see presently, cannot be imbued with any causal significance when dealing with a long-run dynamic problem, and therefore cannot be used in the explanation of dualism.

2) Any one-way relationship between wages and the degree of mechanization rests on the assumption that wages are always an independent variable. This assumption can be questioned from at least two points of view. First, changes in productivity might be independent of changes in wages: to neglect this possibility by leaving aside technical progress and by taking the spectrum of techniques as given, as Mrs. Lutz does, is not a very plausible procedure in a long-run dynamic model. Second, we might find that the level of wages is related to other variables or data in the system, such as the organizational structure of industry and the degree of competition. Both these considerations will receive a wider treatment in the following part.

Furthermore, the relevance of that relationship is conditioned by the existence of a long-run equilibrium (15), in a world in which any change of a variable is followed by an instantaneous adjustment of all other variables. Even though a change in real wages causes a redistribution of income between classes with different propensities to consume, no account is taken of changes in effective demand, of corresponding changes in prices and expectations and of the influence of expectations on investment. Thus, while it is easily admitted that a rise in money wages induces a rise in the price of

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(13) See J. Robinson, "Depreciation", *Rivista di Politica Economica*, November 1959.

(14) See J. Robinson, *The Accumulation of Capital*, chap. X and p. 396.

(15) This implies, among other things, perfect competition and a uniform rate of profit in the economy [see J. Robinson, "The Production Function and the Theory of Capital", *The Review of Economic Studies*, XXI (2), p. 81]. Thus the use of a relationship between wages and capital intensity appears to be limited to the analysis of equilibrium growth and to comparative statics.

capital goods, it is implicitly assumed that the same thing does not happen in the case of consumer goods: but this is inconsistent not only " with the rest of the neo-classical theory, according to which the money prices of commodities are determined by money costs of production and the level of demand in terms of money expenditure " (16), but also with the known fact that increases in costs are more easily passed on to buyers in the case of consumption goods than in the case of capital goods (17).

Similar objections can be moved to the concept of a full employment level of wages, intended as that level of wages which *insures* full employment. The wage level which happens to prevail under full employment, instead, might result itself *determined* by the full employment level of output and by the distribution of output between consumption and investment (18). Since the full employment of a given quantity of labour is possible at various relative levels of consumption and investment, more than one wage rate can be associated with full employment at the same level of aggregate output.

3) It thus appears that no satisfactory explanation of dualism can be obtained from a relationship between wages and capital intensity: and actually Mrs. Lutz' analysis, though providing an accurate description of symptoms, leaves the problem of the causes unsolved. We get a snapshot of the system at a certain moment of time; but we remain ignorant as to what has happened before, while capital was being accumulated and the differentiation between the two sectors was increasing. Even if the relationship were meaningful, a rise in wages and the ensuing fall in employment which have occurred once could explain a static case of dualism, but not dualism as a dynamic phenomenon and as the result of past history.

This static bias is made evident when Mrs. Lutz seems to imply that the swelling of agricultural employment, the diffusion of small units and dualism in production methods are to some extent the effect of a conscius entrepreneurial choice between large scale with high wages and small scale with lower wages. But in the case of a dual economy it is a question not so much of choice as of the

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(16) J. Robinson, *The Accumulation of Capital*, p. 391.

(17) As was pointed out by Keynes (*General Theory*, pp. 7 ff., ch. XIX) labour can bargain the money wage, but not the real wage.

(18) Cf. N. Kaldor, " Alternative Theories of Distribution ", *Review of Economic Studies*, 1955-56, p. 61.

persistence of a pre-existing situation. Excess employment in agriculture, primitive industries and primitive methods of production chronologically precede industrialization and continue to coexist with it at initial stages of development: the coexistence comes to an end or persists according to whether growth takes place with or without distortions. It is at least doubtful that conscious entrepreneurial decisions dictated by the behaviour of wages have a relevant influence on the course of the process, or that the wage rate is the only datum orienting the choice: the availability and the cost of capital, the minimum capital requirements, the structure of the market and the rate of expansion of demand are far more important determinants of the dynamics of investment, income and employment.

This will be seen in the following part of this paper, where we shall attempt to show how dualism can arise and persist independently of the behaviour of wages, i.e. also if wages remain constant over time, and even with a high rate of capital accumulation (19).

II. Dualism in Economic Growth: an Alternative Explanation

1. *Introduction*

We shall attempt here to replace models of regular growth and static theories of dual economies with a dynamic theory of uneven growth. The latter is not meant to be either a complete and exhaustive explanation of dualism or an exact model founded on a consistent set of precise relationships. It is evident that, when the problem presents so many institutional and sociological facets, no

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(19) Thus at the same time also the second proposition of Mrs. Lutz' model, which accounts for the persistence of dualism by recurring to the rate of increase in wages and asserts that if wages instead remain constant (with an adequate rate of investment) dualism will disappear, will be implicitly criticized. Already at this stage it can be noted that, if this proposition were always true, the persistence of unemployment in an economy where the rate of accumulation is greater than the rate of increase in the labour force could only be explained by recurring to the assumption that wages in the past have been increasing just at the rate necessary to prevent any effect of capital accumulation on employment. Mrs. Lutz does not make explicit this extremely restrictive assumption. In referring to the particular case of the Italian economy, to which her model should apply, she quotes, as empirical evidence, a study by Professor GERSCHENKRON ["Notes on the Rate of Industrial Growth in Italy, 1881-1913, *Journal of Economic History*, XV (1955)]: there, however, nothing is said as to the rate of increase in wages.

theory in purely economic terms can claim to be "general" or anything but a first approximation (20).

Some preliminary considerations are needed in order to clarify the approach followed here. Dualism is not a static but a dynamic concept, which designates a tendency towards uneven growth. Lack of homogeneity and existence of inequalities in an economy *at a certain moment*, i.e. in a static sense, are not necessarily signs of dualism, otherwise dualism would be an unavoidable stage of any development process: any process of capitalistic development takes time to spread over the whole system; while it is still in progress considerable inequalities between sectors are, at any moment, normal features of a growing economy. There is no dualism if the widening of the capitalistic sector is such as to gradually absorb the excess population from the rest of the economy and if all the economy enjoys the benefits of capitalistic growth: in this case there is a long run tendency towards economic unification, even though some inequalities may persist for a considerable period of time. If instead there is no such tendency and a large part of the economy is left untouched by the stream of progress, then a gap is being created and we are faced with dualism.

Thus the problem of dualism consists in examining the nature and the causes of the possible alternative courses of a development process already in operation: therefore we shall not be concerned either with the origins of development and its general factors or with a static analysis of a given situation. We shall consider an economy in which development has already been initiated — to us it does not matter how — but is at a relatively early stage: some capitalistic industries are already at work employing part of the population, while the rest of the system is as yet in a precapitalistic state. Our economy is thus at a critical stage from the point of view of dualism: conditions for further growth exist, but growth can either proceed regularly or take a dual path, leaving a part of the system stagnating. Our analysis will be devoted to find the

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(20) Moreover the task of economic analysis is made harder in this case by the methodological difficulties arising when an intermediate approach, which is neither purely microeconomic nor purely macroeconomic, is followed: the procedure which has to be adopted when dealing with dual economies, of limiting the degree of aggregation and trying to relate microeconomic data or variables to the dynamic behaviour of some aggregate magnitudes, necessarily entails a loss of precision, not always compensated by a greater approximation to reality.

conditions of regular growth and to show how and why, instead, dualism can emerge.

Before this, we shall provide a simplified description of some initial features of our economy (wages, pattern of demand, structure of production) which are relevant for our further analysis: as will be seen, no drastic assumptions will be introduced, for the description is likely to fit any economy at a still early stage of development. For reasons which will be fully understood later, we assume that in our economy growth, though already in progress, has been initiated late relatively to other more advanced systems.

2. *Initial Conditions of the Economy*

1) Employment and Wages

In our economy the main productive activities are capitalistic industries at one extreme, agriculture and primitive trade at the other, and, in the middle, family or cottage industries, where advanced methods of production are not yet in use and productivity is much lower than in precapitalistic industries.

The labour force is still in excess in relation to the possibilities of employment. The part of the labour force which is not employed in newly introduced capitalistic industries either is openly unemployed, or lives on land, or is underemployed in trade and in other occasional occupations. Since we assume that employment in agriculture, trade, etc. can be reduced to a considerable extent without any fall in output, supply of labour to industry can be considered unlimited for a relevant period of time. Thus a rise in employment can only take place through a rise in industrial employment: if employment falls in capitalistic and precapitalistic industries also aggregate employment falls.

Income per head in non-industrial activities which provide subsistence to the excess labour force is near to a very low subsistence level. The level of income per head here is not fairly represented by the wage rate: if a person works only two months per year or distributes his earnings among relatives and friends, income per head can be at the subsistence level even though the wage rate is considerably higher (21).

(21) One could visualize the aggregate wage bill paid in these activities as corresponding to the sum of wages paid only to the workers who are necessary to produce the current

Income per head is higher in industries in general and in capitalistic industries in particular: the possibility of subsidizing the excess labour force through underemployment is lower in industry than in agriculture or trade. Income per head is likely to be higher in capitalistic than in precapitalistic industries, even if the minimum wage rate is the same, mainly because in the former industries there is more ample scope for attaining varied and higher qualifications and therefore for the existence of internal wage differentiations above the basic wage rate (22).

However, no assumption is introduced as regards the level of wages paid to workers in capitalistic industries. It does not make any difference to our model whether we assume that the minimum wage rate at this initial stage is the same all over the economy or not. We assume instead that, at least initially, wages in newly introduced capitalistic industries remain constant. These two points need to be stressed in order to emphasize the distinction between the approach followed here and that followed by Mrs. Lutz: instead of having dualism already at the beginning of the story, here we start from a situation in which no dualism has yet evolved; moreover the condition of constant wages is present which, according to

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output; and assume that these workers have to part with some of their earnings, either directly, subsidizing their unemployed relatives and friends, or working less and sharing their jobs with others, in order to keep the excess labour force alive.

(22) It might be argued that, if the supply of labour is unlimited, the level of wages in the capitalistic sector should depend on the standard of living in the underdeveloped sector, and there should be no substantial differences in the standards of living of the two sectors. However a difference is likely to exist, and does exist in most underdeveloped countries, owing to reasons which are quite independent of imperfections in the factor market: (a) as was said in the text, even if the hourly or daily pay is the same in industry as in agriculture and in trade, annual earnings are higher in industry because the industrial worker is not left unemployed for long periods of the year; (b) a somewhat higher wage has to be offered in order to induce workers to move into the capitalistic sector; (c) the very low standard of living in the underdeveloped sector might be inadequate to meet the basic requirements of the worker when he is called to work more and more actively — as it happens when he passes from, say, agricultural underemployment to industrial employment — and it is in the interest of the employer to improve it, in order to obtain a greater efficiency; (d) the *average* wage rate is also higher because in industry skilled and specialized workers are required, who get a wage higher than the minimum wage. Moreover, when we consider the average per capita income, we should take into account the existence in the capitalistic sector of a salaried middle class. On these points see: W. A. Lewis, *Economic Development with Unlimited Supplies of Labour*, cit., and *The Theory of Economic Growth*, London, 1955, p. 180 and p. 228; R. Nurkse, *Problems of Capital Formation in Underdeveloped Countries*, London, 6th Impression, 1958, p. 39; R. F. Kahn, *The Pace of Development*, in VV. AA., *The Challenge of Development*, Jerusalem, 1958, pp. 187-188

Mrs. Lutz, should insure, together with a steady rate of investment, an even development. We shall show that this condition is not sufficient.

2) The Pattern of Demand

It will be useful for further exposition to classify all the consumption goods produced and consumed in our economy under three groups, reducing them to three composite commodities according to some common characteristics of supply and demand. I hope that not much realism in this simplifying procedure will be sacrificed.

We shall call the three composite commodities *a*, *b*, and *c*. Commodity *a* is produced and consumed only in the capitalistic part of the economy. Production of commodity *c* is confined to the precapitalistic sector, but its consumption is common to the whole economy. Production and consumption of commodity *b* are common to both parts of the economy: we shall distinguish it into *b'* and *b''*, according to whether it is produced in capitalistic industries, on a large scale and with advanced methods of production, or on a small scale in the highly labour intensive family and cottage industries. The characteristics of the three composite commodities from the point of view of demand are the following.

Composite commodity *a* includes all those goods which are not consumed at low or very low levels of income (e.g. radio sets, automobiles, refrigerators, some services): since they satisfy only secondary needs and are mainly industrial goods, they can be consumed and produced only in the capitalistic sector. Income elasticity of demand for *a* is high and increasing above a certain income level, but very low below this level — very high in the industrialized part of the economy, very low in the remainder.

Commodity *c* consists of basic subsistence goods and is produced in the subsistence sector, which we have placed in the underdeveloped part of the economy: *per capita* consumption of *c* rises very little with income, and remains constant after a certain level of income has been reached.

Demand conditions of *b* are somewhat intermediate between those of *a* and those of *c*. Commodity *b* (e.g. textiles and "traditional" manufactured goods) is consumed at both low and high stages of development, and therefore in both parts of the economy. Its *per capita* consumption rises with income; but income elasticity

of demand for *b* is high at low to medium incomes and then decreases as income increases.

3) The Conditions of Production and Technology

In our economy the productive sectors are: a subsistence sector producing *c*; a primitive industrial sector producing *b''*; and a capitalistic and advanced industrial sector, in which investment goods and commodities *a* and *b'* are produced. The following assumptions will receive some justification later, when some points of great relevance to our analysis — concerning the historical evolution of the technical characteristics of production methods and commodities produced — will be discussed (23).

Production in advanced and capitalistic industries is more capital intensive and technical coefficients are less flexible than in other sectors. Capital intensity is greater and the variability of technical coefficients is more limited in the production of both investment goods and *a* than in the production of *b* and *c*. The greater flexibility in technical coefficients in the production of *b* is mainly due to the possibility of producing *b* either in capitalistic industries or in primitive industries with high labour intensity (*b''*). This same fact, however, implies a discontinuity in the spectrum of techniques and in the variability of technical coefficients. There is flexibility of technical coefficients until when it is possible to improve techniques and increase productivity inside primitive industries with the introduction of simple machines which do not require any radical change in the structure of the industry itself. The discontinuity appears when production is transferred to a large scale capitalistic industry (24), with a radical change in technology: for the technology used in capitalistic industries, being more capital intensive and increasing cosiderably the minimum economic size of the producing unit is associated with lumpiness of investment and high capital requirements. Thus a gradual substitution of capital for labour is possible only up to a certain point, after which further substitution implies a considerable increase in capital and output per unit of labour: at a given level of aggregate output of *b* (being the sum

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(23) See end of section 9.

(24) Cf. A. O. Hirschman, "Investment Policy and 'Dualism' in Underdeveloped Countries", *American Economic Review*, September 1957.

of b' and b''), a capitalistic firm producing b' is the substitute for a number of primitive firms producing together the same quantity of b'', using much less capital and employing much more labour.

In our economy at any moment a capitalistic surplus is available which can be reinvested so as to increase the stock of capital. We assume that a reinvestible margin is produced only in capitalistic industries, while there is no surplus in primitive industries, where productivity is very low (25).

3. *Implications of the General Model of Development*

We have postulated that in our economy wages remain constant while a margin is made available for reinvestment: thus the two necessary and sufficient conditions are present, which should insure a smooth working of the development process with creation of new employment through capital widening (26). All models founded on these two conditions make abstraction of any problem connected with the level of demand and with the inducements to invest: it is assumed that the surplus on wages is actually reinvested at a constant capital-labour ratio, thus shifting to the right the marginal productivity curve of labour and increasing employment — the process going on until when all the excess labour force has been absorbed. Our purpose in this section is to see how the model looks like when the level of demand and the inducements to invest are taken into account; in sections 4 and 5 we shall show that the working of the mechanism is related to the structure of the industrial sector and to entrepreneurial policy. For purely expository purposes and for making the comparison easier, our argument will be expressed here in the same analytical language adopted in the general development model to which we are making reference, i.e. in terms of the marginal productivity curve of labour.

The value of the physical increment in output due to an increase in the quantity of labour employed is obtained by multiplying this physical increment by current price, if it is assumed that price remains constant with changes in output, or by marginal revenue,

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(25) Cf. W. A. Lewis, *Economic Development with Unlimited Supplies of Labour*, cit.

(26) See tho two articles by Professor Lewis quoted above and V. Lutz, "The Growth Process, etc.", *cit.*, section 7.

if price instead changes and marginal revenue accordingly differs from price. Thus two curves should be considered: we shall call marginal productivity (*MP*) curve the one showing the increase in the value of output at constant prices, and marginal revenue productivity (*MRP*) curve the one which reflects the changes in prices induced by an increase in output and is derived from the marginal revenue curve of the commodity. The relationship between these two curves depends on the elasticity of the demand curve: the lower the latter is, the greater the difference between *MP* and *MRP*, and the steeper the *MRP* curve in relation to the *MP* curve (27).

When a whole productive sector — e.g. an industrial sector producing one of our composite commodities — is considered, since the price elasticity of aggregate demand has a finite value, marginal revenue productivity is smaller than marginal productivity and the two curves do not coincide (28). However, if the aggregate curve shifts to the right, owing to increases in income, the *MRP* curve will also shift and the discrepancy between the *MRP* curve and *MP* curve will be reduced.

This is represented in the diagram, where the value of output and the quantity of labour employed are plotted respectively against the y-axis and against the x-axis. Initially, with given capital, a certain output is produced and sold at an equilibrium price. Curve I shows the value of the marginal physical product of labour at that price: at a wage rate *OW* (constant) *OL* labour is employed and a surplus is obtained (shadowed area). The reinvestment of this surplus will endow the system with more capital and therefore will increase the marginal physical productivity of labour. The curve indicating the value of the higher marginal physical product at the same price will thus shift up and to the right (curve II): but since the additional output can be disposed of only at falling prices, a *MRP* curve should be considered (curve II'), which falls more steeply than curve II, and might even fall more steeply than curve I.

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(27) Marginal Productivity - Marginal Revenue Productivity = Marginal Physical Productivity × Price - Marginal Physical Productivity × Marginal Revenue = Marginal Physical Productivity × Price: Elasticity. If elasticity is 1, marginal revenue productivity is 0; if elasticity is infinite, marginal productivity is equal to marginal revenue productivity. If elasticity has a finite value, marginal productivity is always greater than marginal revenue productivity.

(28) See footnote (27) above.

However, an increase in demand might make curve II' coincide with curve II.

In a fully advanced and progressive economy, where the initial difficulties of development have long ago been overcome, a steady increase in demand (and therefore continuous shifts of demand curves) in response to capital accumulation, technical progress and growth in population can possibly be taken for granted. But in our

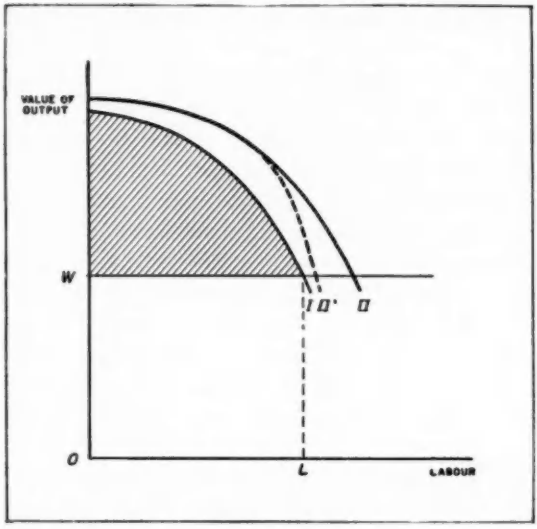

Figure 1

economy growth is not yet an automatic and self-perpetuating mechanism. At low levels of income, since demand is likely to be very inelastic (29), marginal revenue productivity is likely to be very low (30): and this might be a drag to an expansion of output. On

(29) See R. Nurkse, *Problems of Capital Formation in Underdeveloped Countries*, cit., pp. 9-10; G. U. Papi, *Teoria e politica dello sviluppo economico*, in VV. AA., *Teoria e politica dello sviluppo economico*, Milano, 1954, p. 14 and p. 17.

(30) See R. Nurkse, *op. cit.*, p. 14: "value productivity is limited for any individual business by the poverty of potential consumers... The physical increase in output may be spectacular compared with existing output, but value productivity is limited by the low purchasing power of people". Nurkse's value productivity is our marginal revenue productivity.

the other hand demand can increase (and marginal revenue productivity with it) only to the extent to which the industrial sector widens and absorbs the excess labour force; while its level remains low if employment opportunities, i.e. investment, do not expand sufficiently.

The way in which the system gets away from this seemingly vicious circle depends on the structure of its industrial sector, as will be shown presently.

4. *The Development Process under Competitive Conditions*

If competition (31) prevails and entry is free, the position and the slope of the aggregate demand curve are unknown data for the entrepreneurs. The margin obtained in the past provides both the finance for new investment and an inducement to invest and increase output. If entrepreneurs who are already in the market do not intend to plough back their profits, the credit system of a competitive economy makes the existing surplus available to newcomers. Newcomers, as well as existing entrepreneurs, have no notion of a *MRP* curve and rely on the fact that a surplus has been obtained at the existing level of prices (32). Thus, on the assumption that additional output can be sold at the old price, the industrial sector widens and production is expanded with an eye to *MP* and not to *MRP*.

It might be thought that the assumption would soon reveal itself unfounded, for — *MRP* being much lower than *MP* — prices would fall and some firms would be incurring some losses. But meanwhile the general economic situation and the conditions of demand have changed: with the reinvestment of the margin and the widening of the capitalistic sector, employment has increased as has income; and aggregate demand curves, as well as *MRP* curves, have shifted to the right Thus entrepreneurs' assumption

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(31) Competition here is to be intended not in a " pure " static sense, but in a dynamic Schumpeterian sense: in the latter case competition is quite compatible with the existence of short-run profits, which are continuously wiped out and continuosly recreated.

(32) This happens even if competition is not pure in a static sense. In polipolistic competition long-period demand curves are likely to be more elastic than short-period demand curves (see R. Harrod, " Theory of Imperfect Competition Revised ", in *Economic Essays*, London, 1952): expectations of newcomers tend to be the projection of past level of prices and output prevailing for entrepreneurs already in the market.

that additional output can be disposed of at the existing prices, though false in a static sense, turns out to be justified from a dynamic point of view. The act of faith (33) in the market of entrepreneurs creates a new demand which was first lacking and which would still be lacking if the act of faith had not been made. Reinvestment, in turn, creates the conditions for further development — a new margin and new incentives: the process of accumulation can go on smoothly, without distortions, while the excess labour force is gradually absorbed into the industrial sector.

5. *The Development Process under Oligopoly*

If instead of competition oligopoly prevails, the course of the process is quite different. As we shall see later, it is not due to mere chance whether the industrial structure of an economy at the beginning of capitalistic growth is competitive or oligopolistic. Since the data conditioning development are not the same in any case, but vary with the timing and the degree of development of the system relatively to other economies, which assumption is relevant depends on the period of economic history to which the analysis refers. Later on we shall argue that here lies a major difference between the beginning of past development in economies now fully advanced and the first phase of the development process in economies which were left behind and where economic progress has initiated later. For the moment, however, we shall consider the oligopoly case *in vacuo* — first in general terms and then with particular reference to our economy. Beforehand something should be said on the nature of oligopoly (34).

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(33) R. Nurkse, *op. cit.*, p. 15.

(34) We do not need here anything like a complete theory of oligopoly, and we shall simply call attention on some general features of oligopolistic behaviour which are relevant in this context. These features have been analyzed in two recent works by Professors P. Sylos Labini (*Oligopolio e progresso tecnico*, Rome, 1957) and J. S. Bain (*Barriers to New Competition*, Cambridge, Mass., 1956), which are to a large extent complementary. Both the authors, while emphasizing the irrelevance of static equilibrium theories of oligopoly, show the possibility of finding out an economic rationale for the empirical rules of oligopolistic behaviour: the level of mark-up and price, instead of being considered simply as "the result of past history", is shown to follow necessarily from the behaviour of other variables in the model. On these two books see F. Modigliani, "New Development on the Oligopoly Front", *Journal of Political Economy*, June 1958.

The maintenance of oligopolistic conditions in a market is possible because there are barriers to new competition from outside the group and forces which prevent cut-throat competition from disrupting the minimum necessary cohesion inside the group. Economies of scale and technological discontinuities are a major obstacle to new competition, for they make production profitable only at a certain minimum scale and therefore set limits to a competitive expansion of supply: expansion of output and new investment are thus conditioned by the expectation not simply of additional demand, but of a minimum quantum of additional demand, and by the availability of a minimum quantum of capital. Product differentiation is a further barrier to internal and external competition when a large fixed investment in selling is required in order to enter the market or to increase any particular firm's share of sales.

Fewness allows individual firms to appreciate their reciprocal interdependence as well as the overall market situation, and makes them conscious of the necessity of following some quasi-collusive rules which can keep the firms and the group in a dynamic equilibrium. Price cutting is avoided and competition inside the group takes mainly the form of non price competition and product differentiation. Entrepreneurial policy is dictated by the consideration not of problematic individual demand curves, but of the more objective and reliable data of the aggregate demand curve — its position and slope and its shifts through time. Thus firms' action can be adapted to changes in the relevant data without the established equilibrium being disturbed: a sufficient increase in demand can make entry attractive or induce existing firms to build new plants; price changes can be induced by cost changes which are common to all members of the group.

When we consider the economics of oligopoly, we are led to think that in the oligopoly case the pattern of development may not be the same as in the case of competition. Oligopolists, unlike competitive entrepreneurs, are conscious of the overall market situation: when the market is limited and effective demand is deficient, they do not assume the existing price as given, and are aware that additional output can be disposed of only if prices are cut. Since the *MRP* curve becomes then relevant in deciding whether and to what extent output should be expanded, the availability of a given surplus may not be followed, or may be followed only to a small

extent, by reinvestment in capital widening and expansion of production (35).

It might be argued that, if oligopolists really knew the market situation, they should foresee that their investment would create over a long run that demand which at present is lacking. But the increase in demand on which any particular firm should rely could only result from *joint* reinvestment on the part of *all* firms: an oligopolist may know a lot about the dynamic possibility of his industry, but only as far as the supply conditions are concerned, because the dynamics of demand depend on the dynamic conditions of the whole economy; and no individual firm would undertake to invest and expand production on the assumption that other firms belonging to other industries act in a similar way. In the case of investment decisions quasi-collusion works only in a negative way: if expectations of future demand for any entrepreneur are dependent on other entrepreneurs' investment decisions, nobody will take the first step, waiting until potential demand becomes actual. In the absence of other inducements such a general interdependence of expectations and decision is an obstacle to capital widening (36). From this point of view it is difficult to find an intermediate possibility between the blindness of competitive entrepreneurs and a complete knowledge of market conditions *and* of *all* the dynamic implications of entrepreneurial decisions, which can be attained only by a central body: in both cases industries widen, output is expanded and the mechanism of development can work. But the far-sightedness of the oligopolists, going only half way, deprives them from the incentives necessary to perform the act of faith in the market necessary for the type of development visualized in the model mentioned above: greater far-sightedness than competitors in the short run becomes short-sightedness from the long-run and dynamic point of view of the economy as a whole.

The consideration of two specific features of oligopoly strengthens this conclusion. First, as has already been said, expansion of

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(35) It must be stressed that our analysis of the influence of the structure of industry on growth applies to *initial* stages of development and is not concerned with the growth of advanced economic systems.

(36) An analogous view has been expressed with great vigour by E. D. Domar, *Investment, Losses, and Monopolies*, in VV. AA., *Income, Employment and Public Policy: Essays in Honor of Alvin H. Hansen*, New York, 1948: see especially p. 39 and pp. 49-53.

production and new investment are conditioned by expectations *of a minimum quantum* of additional demand (which can be rather large), for, owing to technical discontinuities and minimum capital requirements, production cannot be expanded gradually: thus the increase in demand necessary to induce new investment must be such as to overcome this discontinuity (37). Second, if oligopoly prevails, the credit system is to a large extent deprived of the possibility of performing his most important function in a development process: that of making the existing profits available to newcomers and to the most enterprising firms. Profits earned by large units, instead of being made available to other firms through the channels of the credit system, are kept under the financial control of the market leaders until when they can be utilized for self-financing. Thus capital can be at the same time abundant and scarce: abundant for big firms, whose investment policies are very cautious; scarce in the economy as a whole and for firms not belonging to the controlling groups — medium and small firms and newcomers, who are the main actors of the competitive process resulting in capital widening (38).

Having stressed so far that the general model of development cannot be relied upon if there are oligopolistic imperfections in product markets, it must be seen now how oligopolistic firms reinvest their margin. A more detailed consideration of the various industrial sectors will allow us to qualify the above argument, which concerns only the general inducements to capital widening.

6. *The Oligopolistic Investment Policy and Its Primary Effects*

The absence of general inducements to invest in capital widening by no means implies that an oligopolistic economy will be stagnating. Some profitable outlets exist, through which the surplus accumulated by capitalistic firms in any given period can be profitably employed and which allow the process of capital accumulation to continue.

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(37) See R. Nurkse, *op. cit.*, p. 10; P. Sylos Labini, *op. cit.*, Part I; G. M. Meier and R. E. Baldwin, *Economic Development: Theory, History and Policy*, New York, 1957, p. 323.

(38) See M. Kalecki, *Theory of Economic Dynamics*, London, 1954, pp. 92 and 95; V. Lutz, " The Growth Process, etc. ", *cit.*, p. 297.

1) Elimination of Primitive Industries

A specific inducement to expand productive capacity in some industrial sectors arises from that some commodities — our composite commodity *b* — are produced both by modern capitalistic industries and by primitive industries, which together satisfy aggregate demand. The market share of small primitive firms offers an attractive field for expansion to oligopolists in the advanced sector, who can increase production at the expense of the former and appropriate a demand which is already in existence. Price cutting being avoided by oligopolists, use will be made of the typical weapons of oligopolistic competition which are not available to small firms — a better sales organization, advertising, product differentiation.

The primary effects (the indirect effects, which are more relevant in the long run, will be examined in the next section) of the substitution of advanced capitalistic industries to primitive firms follow from the fact that there is a sensible gap in capital intensity between the two: at an unchanged level of aggregate output considerably more capital and less labour are employed. If the additional production of *b'* has only substituted a part of the previous output of *b''*, employment in the capitalistic sector rises, but aggregate employment falls owing to the difference in capital intensity: of workers previously employed in the primitive firms which have been eliminated, some are absorbed into the capitalistic sector and some are pushed back into the subsistence sector. Aggregate income in the capitalistic sector increases, while it remains unchanged in the subsistence sector. Income per head of workers employed in the former sector is left unchanged; it increases for workers shifting from primitive to capitalistic industries; it falls for workers left unemployed and for those in the subsistence sector. However, an expansion of capital goods industries following the widening of industries producing *b'* may offset to a certain extent the fall in aggregate employment (39). But in any case there will be more workers whose income is higher than the average, while at the same time the number of those whose income is lower increases or at best is left unchanged.

(39) However the capital-labour ratio in such industries is likely to be higher than in consumer goods industries.

While capital widening under competitive conditions is always accompanied by a net increase in aggregate supply, this type of oligopolistic expansion takes mainly the form of substitution of new output for previous output; and, even though the process has a capital-widening character for the expanding industries, it has a capital-deepening effect for the economy as a whole (40). This depends on the different nature of entrepreneurial policy in the two cases. In the competitive case entrepreneurs simply aim at increasing their output, on the assumption that it will be absorbed by the market; nor could they resort to any other means but price cutting to eliminate their rivals, since a systematic campaign of non price competition is beyond their limited financial power. As we have seen, the increase in demand will actually follow the increase in supply, even though the existence of lags between the two may generate a temporary price fall. Oligopolists on the other hand aim directly and explicitly at substituting their output for other firms' preexisting output: since their competitive effort is directed to the elimination of other products, the increase in supply takes place in such a way that it necessarily becomes substitute and not additive to previous supply.

Also the substitution of capital for labour occurring in this case of oligopolistic expansion has not the same nature as that brought about by gradual mechanization of primitive industries. First, while the process is discontinuous and the minimum increase in capital intensity is very high when a big modern plant replaces a number of small primitive plants, the process is gradual and capital intensity increases by degrees when small firms start adopting new methods of production. A second difference regards market conditions and entrepreneurial behaviour. In the former case additional output is produced *at unchanged costs* from the point of view of the expanding firms, and sold at the expense of other firms' previous output. In the other case firms improving their production methods feel directly, in the form of *lower costs*, the benefits of the increase in productivity which is taking place in the economy, and therefore have an even greater incentive to expand production. This latter process goes beyond the substitution of output produced with more labour and less capital with an equal amount of output produced

(40) Because an unchanged aggregate output is produced with more capital and less labour.

with more capital and less labour — its ultimate effects being those visualized by the Ricardian analysis, of an increase of both aggregate output and employment (41).

Some other effects of oligopolistic expansion follow from the nature of the competitive weapons used by oligopolists. Selling expenditures, insofar as they represent an additional cost for the entrepreneurs, reduce the investible margin and therefore slow down the rate of accumulation, with negative effects on employment both in the investment goods and in the consumer goods industries. On the other hand these expenditures are necessary, for, owing to the very nature of oligopoly, incentives to expand production would be lacking without them. It is unlikely that the consequences of selling expenditures on employment can be offset by an increase in the number of workers employed in selling activities, especially when we consider the dynamic and long-run effects of productive investments. Moreover the newly employed in selling do not come from the ranks of the wage-earners unemployed or underemployed in the subsistence sector, but from " the army of salesmen, advertising agents, publicists and salaried employees... (who)... form a large proportion of those engaged in distributive activities " (42): selling expenditures are taken away from profits and transferred entirely to consumption — mostly non workers' consumption.

2) Technical Progress

Inventions which give rise to investment decisions represent another outlet through which the margin is reinvested. In our economy, however, investment induced by inventions is not likely to have any positive effect on employment for various reasons.

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(41) D. Ricardo, *Principles*, Ch. XXXI (" On Machinery "); see also W. A. Lewis, *Unlimited Supply of Labour: Further Notes*, *cit.* and P. Sylos Labini, *op. cit.*, pp. 131 ff. As Professor Lewis puts it, (*The Theory of Economic Growth*, *cit.*, pp. 140-41) the effects of the elimination of primitive industries depend on the relative rates of increase of demand and productivity: " if productivity increases faster than demand, unemployment is created; but if demand increases faster than productivity, there is either inflation or increased employment "; the increase in demand depends in turn on the rate of absorption of labourers from the backward sector. In the case we are considering productivity grows faster than demand, the failure to create new employment being at the same time the cause and the effect of this. The recent industrial development in Sicily provides a striking example of a process of this kind: see footnote (61) below.

(42) P. Sweezy, *The Theory of Capitalist Development*, New York, 1942, p. 284; see also pp. 278-85, and J. Robinson, *The Accumulation of Capital*, p. 92.

A first reason is, again, inherent in the policy followed by oligopolists. Investments in new production methods are undertaken only if the latter can insure a higher rate of profit. Therefore, in the case of a rise in the productivity of labour due to an invention, direct employment can rise only if output increases more than proportionally to the increase in productivity, while at an unchanged level of output less labour is employed (43). When we consider the unwillingness of oligopolists to expand output, we are bound to think that the possibility of an increase in employment might be rather remote.

The effect of inventions would be different if they were of a labour-using nature. It is however unlikely that this is the case in our economy. In less advanced economies, where growth has started later, technical progress is rarely a factor originating from inside the system. The blueprints of new methods of production are imported from more advanced countries: the nature of technical progress being adequate to the state of knowledge and to the relative availability of factors in such countries, new techniques are likely to be oriented towards a greater use of capital at the expense of labour (44). Such techniques are adopted without any change in economies like the one we are considering, even though they do not appear advantageous to the economy when the overall situation of employment is taken into account.

Indeed, if the type of the oligopolistic investment in technical progress is not the most appropriate to the situation of an economy where capital is scarce and labour redundant, this is due not only to the labour-saving nature of the new production methods, but also to a profound contradiction existing between the general economic conditions and the position of oligopolistic firms. If capital were as scarce and expensive for oligopolistic firms as it is in the rest of the economy, the incentive to adopt innovations with very high capital requirements would be greatly reduced. But in our economy, where capital is scarce because industrial development is still at an

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(43) Cf. O. Lange, *Price Flexibility and Full Employment*, Bloomington (Indiana), 1952, p. 74.

(44) Cf. R. Kahn, *The Pace of Development*, *cit.*, p. 189; R. Nurkse, *Problems of Capital Formation etc.*, *cit.*, p. 45. The borrowing from other more advanced countries of technical knowledge, industrial know-how, methods of business organization, etc. was a characteristic of the early Italian industrialization: cf. B. Foa, "The Italian Economy: Growth Factors and Bottlenecks", *Banca Nazionale del Lavoro Quarterly Review*, No. 27, September-

early stage, a great part of the investible capital, instead of circulating through the system, is kept under the control of oligopolistic industries and is not made available to other industries (45). Since oligopolistic entrepreneurs have a dim view of investment opportunities, apart from the possibility of expanding at the expense of precapitalistic firms, the expected rate of profit obtainable in widening productive capacity is low. Thus also the cost of capital is low for oligopolistic industries, and quite independent of the level of the current rate of interest which smaller firms have to pay: and this of course makes capital-using innovations more attractive than they would be if that higher rate of interest were relevant in entrepreneurial decisions.

If the bias towards labour-saving inventions were accompanied by a dynamic competition of Schumpeterian type, technical progress would be in any case an expansionary factor, no matter how it is biased. Inventions would immediately be adopted by some firms, and other firms would have to scrap their old plants, in order not to be eliminated, and to follow suit "in a leap-frog game" (46): thus innovations would give rise to an outburst of investment, with positive effects on both income and employment. But in the case of oligopoly the low degree of competition affects also the adoption of innovations, slowing down the speed of the game. Entrepreneurs will try to avoid the loss of scrapping equipment before the end of its economic life and to adopt new methods of production only when the depreciation period is over. This will be easier under oligopoly, because there are barriers to newcomers, who, bearing no loss in exploiting a new method, are, in competitive conditions, the leaders of technical progress. Moreover, while for a small firm "the introduction of a new machine may become particularly attractive as an instrument for underselling other firms and capturing their market", for a firm already possessing a sizeable part of the market, "there isn't much to conquer, and the loss from scrapping bulks large" (47).

December 1953. See also section 9 below. In less developed economies often also the machinery embodying the innovation is imported from abroad. In this case also the positive effects on employment in the investment sector, otherwise following the adoption of a more capital intensive technique, is prevented.

(45) See end of section 5, above.

(46) J. Robinson, *The Accumulation of Capital*, p. 85; J. Schumpeter, *Capitalism, Socialism and Democracy*, London, 1954, Chapters VI-VIII.

(47) E. D. Domar, *Investment, Losses, and Monopolies*, *cit.*, p. 36. This does not mean that oligopolistic firms will not eventually adopt innovations; they will, but only when

Thus new investments will have more a substitutive than an expansionary effect.

3) New Products

New products are another major outlet of investment. Innovations of this type in more advanced economies are associated with economic progress and with a rise in the standard of living; in economies like ours they are more likely to result from a negative entrepreneurial appreciation of the capacity of the market to absorb increasing amounts of the existing commodities. Consumers' tastes can be influenced through advertising, and demand for new products can be created, at the expense of actual or potential demand for commodities already sold in the market. Oligopolists of course rely more on a future demand which they can directly build up with a selling campaign than on expectations of an expansion conditioned by joint investment, which, as such, escapes their control.

New commodities usually contain more capital relatively to labour than old commodities (48). They are usually appropriate to the higher living standards of more advanced economies, from where they are imported in less developed economies. In the former economies these new products start being consumed only when all the more basic needs have already been satisfied; in less advanced countries, instead, they are introduced when incomes are still very low for a relevant part of the population and when also *per capita* consumption of more essential goods is still low. It is true that human needs escape any classification and that it cannot be said *a priori* which good is more essential in absolute without introducing a value judgement. Still it is legitimate to say that, while in the economic history of more advanced economies there has been a gradual evolution in the pattern of demand and in the basket of goods produced, it is likely that no such gradualness will characterize the economic growth of less advanced systems.

This difference is due not so much to a spontaneous and autonomous change in the pattern of demand, as to a change in the

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the plant embodying the old technique has reached the end of its economic life, having yielded all the quasi-rents expected at the beginning of its life. What is lacking is not the adoption of inventions, but the process of " creative destruction " caused by inventions in the dynamic competitive case, with its expansionary effects.

(48) See section 9, below. Cf. R. KAHN, *op. cit.*, pp. 194-195.

pattern of supply, which in turn modifies demand. Indeed it is often easier to influence the pattern of demand of more primitive consumers with low living standards, since, owing to their backwardness, no set of value judgements as to the order of priority in the satisfaction of needs is well rooted in them. For instance, more cultivated and educated persons would deem, say, clothes indispensable and they would never switch money from purchasing clothes to buying a TV set; but it is a matter of common observation in half-developed economies to see durable consumers' goods, which can be considered superfluous by any standard, in slums where six people sleep in the same room and children cannot be fed and dressed properly. In our economy this well known demonstration effect and the introduction of new products appear to be, at least *prima facie*, an expansionary factor, since they provide an incentive, otherwise lacking, to investment (49).

The introduction of new products causes a change in the pattern of demand, both statically and, through changes in income elasticities of demand, dynamically: commodity *a* substitutes commodity *b'* and commodity *b'* substitutes commodity *b''*. The process leads also to a considerable expansion of the tertiary sector, since it is accompanied by heavy expenses in selling and by the development of various forms of consumer credit — all the more necessary when incomes are rather low. The effects of the process on the dynamics of employment will be dealt with in the following sections (50).

7. *The Long-Run Effects of Oligopolistic Expansion on the Dynamics of Employment*

Already at this stage it should be clear that, owing to the cautiousness of oligopolists in expanding output and to the constant bias of their investment policy towards increasing capital intensity, the pattern of capitalistic expansion is far more complex under oligopoly than under competition.

Positive factors of development are at work also in the oligopoly case. All the three possibilities of reinvestment envisaged above

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(49) See A. C. Chiang, "'Demonstration Effect' in a Dual Economy", *The American Journal of Economics and Sociology*, April 1959.

(50) This process is very similar to that of elimination of precapitalistic firms, and to a certain extent coincides with it, for product differentiation makes the commodity sold by the capitalistic firm different and new with respect to that sold by the primitive firm.

imply an increasing demand of capital goods and therefore lead to an expansion of the investment sector. Moreover new commodities are *per se* an expansionary factor, since their introduction will not cause an immediate and sudden interruption in the production of older products, and the competition with the latter might regard the additional purchasing power rather than a part of the purchasing power previously spent. Thus the increase in industrial productivity which accompanies oligopolistic expansion is bound to result in an increase in output and also in some increase in employment.

But the fact that employment can rise or does rise is of minor importance, because, considering a certain pattern of industrial expansion, we are interested not so much in its immediate consequences on the *level* of employment, as in its overall effects on the *rate of expansion* of employment: it depends on the speed at which employment rises, compared with the rate of increase in population, whether and to what extent structural unemployment disappears. From this point of view there is no doubt that the oligopolistic type of development process is the least favourable to an even spread of growth throughout the economy, since positive expansionary forces are counterweighed by negative factors which make the elimination of unemployment very problematic.

This conclusion is given much stronger grounds and acquires a greater dynamic significance when the indirect effects of oligopolitic expansion on employment, through technology and the pattern of demand, are considered. We shall approach the problem with reference to the conditions of supply and demand prevailing in our economy.

We know that income elasticity of demand for commodity *b* is very high from low to medium income levels and then decreases rapidly, while income elasticity of demand for *a* is very low at low income levels and becomes high after medium incomes: for simplicity we can assume that at any income equal to that of workers in capitalistic industries some *a* starts being consumed, while at any income lower than that no *a* is consumed and all additional income is spent in *b*. We also know that technologies are more capital intensive and less flexible in the production of *a* than in the production of *b* and in the production of new commodities than in that of old commodities.

The absorption of the excess labour force taking place in the competitive type of development process affects the aggregate con-

sumption pattern in two ways. On the one hand newly employed workers will considerably increase their consumption of *b* and will start consuming some *a*. On the other hand income per head will increase in the backward sector, for an unchanged aggregate income will be shared among less people: if no change in the pattern of demand has meanwhile intervened, the additional *per capita* income will be spent in *b*. Thus development affects mainly consumption and production of *b*, which expand along with the improvement in the conditions of the backward sector; the expansion of industries producing *a*, without being prevented, is kept in line with the relative state of development of the economy and of the two sectors.

In the oligopolistic growth process, instead, a number of factors contribute to swell consumption and production of *a* at the expense of a potential expansion of *b*. In the oligopoly case the increase in capitalistic employment is not accompanied by any relevant decrease in the excess labour force living in the backward sector. With the elimination of primitive firms, the *trait-d'union* between the advanced and the backward sector is abolished: as was said above, there are more workers who earn more without there being less workers who earn less than the average, since only a part of the workers previously working in primitive firms are absorbed into capitalistic industries. This tendency for the gap between the two sectors and the two groups of labourers to grow larger is reflected in the composition of aggregate consumption. The increment in incomes per head accrues to the workers who have passed from primitive to capitalistic industries, and who were already relatively better off than the unemployed and the underemployed in the backward sector; the very low income per head of the latter, instead, has at best remained unchanged. It follows that, while demand for *a* increases as much as in the competitive case and possibily even more, the increase in demand for *b* is reduced by all the potential increment in income per head of the backward sector, and, for workers of primitive industries left unemployed, by the difference between actual income per head in the backward sector and income per head in primitive industries. To the same extent the expansion of *b* industries is hampered.

The diversion of a part of the capitalistic margin from investment to selling expenditures works in this same direction. Income originating from these expenditures, instead of accruing to newly employed workers, mainly benefits, in the form of salaries and

profits, a subcapitalistic class of selling agents, salesmen, etc. Since the level of income of the latter class is certainly higher than that of workers, income elasticities of demand and the way in which additional income is spent are different: while workers would spend most of their additional income in *b*, members of that class will spend most of it in *a*.

So far we have considered the changes in the composition of demand induced by the distribution of the increments in income assuming that the patterns of individual demand at various income levels remain constant through time. But the introduction of new products changes the pattern of demand itself, and is a further factor working, as we know, in favour of *a* and at the expense of *b*.

Thus in the oligopolistic process of expansion there are a number of factors which conjure to swell the consumption of *a* and to check the expansion of industries producing *b*. Some consequences of this tendency are more striking because they are paradoxical. In our economy industries lagging behind are just those supplying some essential products (e.g. textiles) of which a relevant part of the population is lacking and for which potential demand is very high even though actual demand is low. Meanwhile other industries producing commodities which a relevant part of the population cannot afford to buy expand their output and lead the industrial development (51).

But the most relevant effects of the process concern the dynamics of employment. Technical progress tends by itself to increase capital intensity and to limit the variability of factors in production processes. And the evolution of the pattern of demand which accompanies oligopolistic expansion works in the same direction, making it profitable to concentrate investments in sectors where technical coefficients are less variable and capital intensity is higher. As a result the opportunities for new employment are reduced, for a higher capital intensity implies that a larger amount of the relatively scarce factor (capital) is necessary to absorb a given amount of the redundant factor (labour), and a more limited variability of technical coefficients makes the proportion of factors used rather rigid and

(51) The Italian case provides a good illustration of this paradox. It should be noted that the crisis of, say, textile industry in a country like Italy, where probably income elasticity of demand for textiles is still fairly high for a large part of the population with low income levels, should be distinguished from the inevitable decline in the relative importance of the same industry occurring in advanced countries with high *per capita* incomes and low income elasticity of demand for more essential goods.

invariant with changes in their relative price. Furthermore technical progress and the evolution of the pattern of demand, being two aspects of the type of development process which we have tried to sketch, are interdependent and react on each another, giving rise to a cumulative process.

What has been said could provide the ground for a dynamic interpretation of Professor Eckaus' well known analysis of the problem of factor proportions (52). Professor Eckaus, approaching the problem from a purely static point of view, pointed out that, with

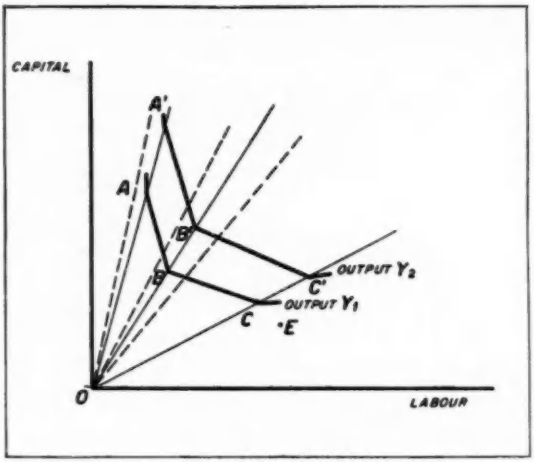

Figure 2

a given endowment of factors, the limited variability of technical coefficients of modern production methods might make full employment impossible, independently of the flexibility of factor prices. This can be shown in the case of one good produced with a limited number of processes: in figure 2 — where capital and labour are plotted along the axes, the point A, B, C indicate the combinations of factors required by the processes available for producing an output y_1 and the points A', B', C' the combinations of factors required by the same processes for producing an output y_2 — the point E, indi-

(52) R. S. Eckaus, "The Problem of Factor Proportions in Backward Areas", *American Economic Review*, September 1955.

cating the amounts of labour and capital available, is outside the area delimited by the expansion lines of the most capital intensive and the most labour intensive processes. The same proposition might also remain valid when two sectors producing two goods are considered, one with higher capital intensity and limited variability of factors and the other with lower capital intensity and variable coefficients, since, it is shown, there may be some combinations of the two commodities for which one of the factors will not be fully employed. Thus in the transformation curve of two commodities

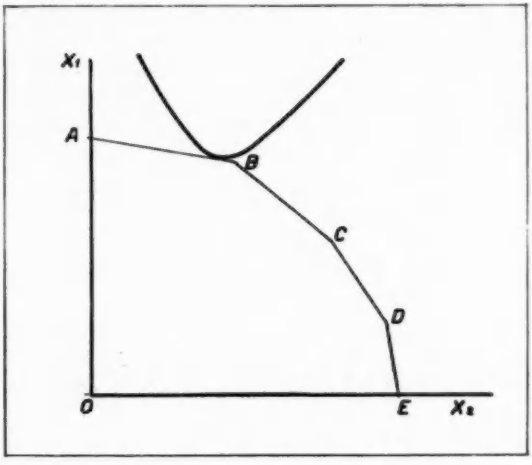

Figure 3

x_1 and x_2 (figure 3) there will be unemployment of labour for any combination of the two commodities along the segment AB: if the composition of demand is such that the indifference curve of the community is tangential to the transformation curve along AB, the maximum value of output will be incompatible with full employment.

Professor Eckaus' analysis does not lead us very far, because, being static, does not tell us what happens when capital is being accumulated, thus shifting up point E in figure 2. Moreover, the role of the composition of demand is left in the vague, though Professor Eckaus himself mentions the possibility that the indifference

curve of the community might not be independent of the particular processes or combinations of processes adopted (53).

We have tried to show that there is a tendency for production processes to become more capital intensive and for variability of technical coefficients to become more limited: this makes the absorption of unemployment more difficult, as can be seen by the position of the new expansion lines (dotted lines) in figure 2; or even better by the fact that, as a result, the range of patterns of output which are incompatible with full employment is widened in the case of two goods, and the corresponding trait of the transformation curve of figure 3 will be no longer *AB*, but *ABC*. Moreover we have tried to link the position of the community's indifference curve with this type of development process, and to show that the tendency for the curve to assume just one of the positions incompatible with full employment is inherent in it, while the position of the curve affects in turn the technical characteristics of production.

8. *Increases in Wages*

So far we have assumed that both money and real wages remain constant, in order to show that distortions in the growth process can arise independently of the dynamic behaviour of wages. When we drop this assumption, we realise that a very important cause of rises in wages is to be found in the rapid increase in industrial productivity which accompanies oligopolistic development. These productivity-induced rises in wages might induce, in turn, further increases in productivity: but on the whole it would be quite illegitimate to establish any precise causal relationship, as Mrs. Lutz does, between the two variables (54).

The wage policy of the Trade Unions is to a certain extent associated to the relative importance of the capital-deepening and the capital-widening character of investment in the growth process. If the capital-widening character prevails and employment rises,

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(53) P. 553, footnote 17.

(54) In Italy, between 1950 and 1955, output per man-hour in the group of medium and large scale industries increased by 57 per cent (output increased by 64 per cent, employment by 1.8 per cent, total man-hours worked by 4.2 per cent); in the same period and in the same industries money wages rose by 35 per cent, real wages for the worker (taking into account the cost of living) by some 12 per cent, the real cost of labour for the employers (taking into account wholesale prices) by some 32 per cent. (V. Lutz, "Some Characteristics of Italian Economic Development", *cit.*).

neither the capital-labour ratio nor productivity rise very fast *in the expanding industrial sector*, even though average productivity in the economy as a whole might rise very fast. In a process of industrial expansion characterized by capital-deepening investment, instead, productivity rises very fast in the expanding capitalistic sector, while average productivity in the whole economy rises much more slowly. Since Unions look at the trend of productivity in single industries, and not at the trend of average productivity in the economy, or even of average industrial productivity, in order to justify their wage claims, it is more likely that they press for and obtain higher wages in the latter type of process than in the former.

Also the imperfections in factor markets, which allow wages to increase when the labour force is still redundant, and the effectiveness of Unions' wage policy are associated with the general characteristics of the growth process. When in a growing but still very poor economy the rise in profits taking place during the industrial expansion is accompanied by a steady absorption of the excess labour force, there is no need for a social justification for rising profits, and claims for higher wages can be resisted with the argument that the larger is the amount of resources devoted to investment, the more employment can expand. If instead unemployment remains constant or decreases slowly in spite of industrial development, some price has to be paid by entrepreneurs: the concession of higher wages is far more convenient than price cuts, which would upset the oligopolistic equilibrium, or Government controls on prices and investment. Increases in wages affect all firms alike and they allow to obtain the implicit acquiescence of the Unions, more interested in the welfare of the employed than in that of the unemployed, to the preservation of the existing situation.

Rises in real wages on one hand increase effective demand, thus providing incentives to industrial expansion. On the other hand, however, they reinforce the evolution of the pattern of demand in a direction unfavourable to full employment, since they accrue to workers who are already relatively better off — thus widening the gap between their condition and the condition of the unemployed and the underemployed in the backward sector — and induce an increase in demand which is mainly directed towards commodity *a*.

In the case we have examined real wages might rise both for the workers who get them and for the employers who pay them.

But very frequently a higher money wage represents a higher real cost of labour for the employer and at the same time an unchanged real wage for the worker. This happens when retail prices and the cost of living rise while wholesale prices remain constant, and higher money wages are asked by the Unions in order to keep the purchasing power of workers constant. Often an inflationary rise in retail prices is the result of the type of development process sketched above.

Owing to the oligopolistic structure of industry, to the slow rate of absorption of the excess labour force and to the elimination of primitive firms, labour, small entrepreneurs and the capital controlled by the latter crowd into activities which are still free from oligopoly and where technological obstacles to entry as well as capital requirements are limited (55): the most accessible and the most attractive of such activities is small trade. Since competition in trade is very imperfect, even if excess capacity prevails and sellers are too many, the price of distribution will not fall: on the contrary, the entry of newcomers, reducing any seller's share, will cause the mark-up on costs to be raised in order to limit the fall in gross profits. Thus an exaggerate expansoin of the tertiary sector implies a rise in the cost of distribution, which, in semi-advanced countries, is the cost of inefficiency: it is one of the ways through which the community subsidizes a part of the excess labour force and the small entrepreneurs victims of the oligopolistic development (56). This forced contribution levied on consumers and on producers of primary products has considerable inflationary effects and makes nobody better off: newcomers will be attracted by the illusion of high margins and excess capacity will tend to increase; thus the swelling of the tertiary sector contributes to hide the reality of a heavy underemployment. Wages will follow retail prices and rise in money terms; if the wholesale price of industrial products meanwhile does not rise, profits, and the margin available for rein-

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(55) See P. Sweezy, *op. cit.*, p. 277.

(56) Italy offers striking examples of inefficiency and excess capacity in retail trade and of very high distribution costs. Retail distribution margins can be as high as 100-150 per cent. Considering the distribution of agricultural products and foodstuffs, in 1951 there was a shop every 158 persons; in 1954, there existed 300,128 shops in this branch of trade, of which 83.5 per cent employed no more than two persons and only 1.7 per cent employed between 6 and 50 persons. For these figures and for some problems connected with distribution costs, see L. Spaventa, "Il costo del commercio", *Il Mulino*, No. 53.

vestment, will be squeezed without any benefit for workers. It can be concluded that this type of rise in wages has only negative effects on the development of the system.

9. *Dualism in Economic Growth*

We should now be able to put together the various parts of our analysis, drawing some general conclusions on the *modus operandi* of a process of dual growth and trying to show the foundations of our explanatory hypothesis.

1) The Inadequacy of Current Models

Dualism is a *tendency* to growing inequality and cumulative differentiation between two parts of an economy. During the first phase of a process of capitalistic development — when industrial expansion has started but has not been going on long enough and has not yet spread throughout the whole economy — at any moment there are static inequalities, which are not necessarily signs of dualism. If growth procedes smoothly, such inequalities will be eliminated in the long run; if there is dualism, the first phase of the process will never be completed, the excess labour force will not be absorbed and further growth will take place only in the already industrialized part of the economy. This dynamic conception of dualism excludes the validity of any explanation of the phenomenon in static terms.

Dynamic development models make even and smooth development dependent on capital accumulation and the constancy of real wages: hence it has been argued that, if growth proceeds unevenly in spite of capital accumulation, the fault must be of wages rising too fast. But on one hand many doubts can be cast on the validity of any kind of precise relationship between wages on one side and employment and capital intensity on the other — doubts concerning both the mechanism through which the relationship is supposed to work and the nature of the increases in wages. On the other hand it can be shown that the validity of the development models in question is conditioned by the implicit assumption that competition prevails in industries, and that, if this assumption is dropped, dualism can arise independently of the behaviour of wages.

Under competition freedom of entry, availability of credit and above all an appropriate entrepreneurial behaviour insure that the

whole investment of the capitalistic surplus is directed to expanding productive capacity and to create new employment opportunities at a slowly rising capital-labour ratio. Blindness as regards market conditions makes entrepreneurs unconscious of risks and losses implicit in investments leading to the expansion of output or to the immediate adoption of new production methods, and therefore makes them willing to undertake such investments; safety in investment, on the other hand, would cost too much for a competitive entrepreneur, since it would require too large an amount of capital. As it turns out to be, if potential losses are ignored, they never become actual; and, if an act of faith is made by all entrepreneurs, the conditions are created which insure the success of the investments and the expansion of the system.

2) The Role of Technology and the Working of Dualism

When we introduce the hypothesis of oligopoly, the model of development mentioned above ceases to be relevant. This by no means implies that distortions affecting the growth process are only caused by subjective behaviour and conscious decisions of entrepreneurs. When we go to the bottom of our explanatory hypothesis we see that technology is the common factor underlying both the assumption of oligopoly and the *modus operandi* of the process.

Technology becomes relevant to this effect when it is associated with discontinuities of such importance that they cannot legitimately be neglected in the theory of production. Broadly speaking, such discontinuities can affect either the variability in the proportion of factors used for producing a certain output, making it very limited, or the economies of scale, as it is the case when a method of production, by which sensible reductions in costs per unit of output can be obtained, cannot be adopted economically at less than a rather large minimum scale of output and requires a rather large minimum amount of capital.

The relationships between these two kinds of discontinuities (which, even though distinguishable in principle, in actual facts are strictly connected) on one side and oligopoly and the oligopolistic process of growth on the other are manifold, and so complex, that it is difficult to go beyond interdependence and establish a causal sequence. Discontinuities implicit in certain types of technology are a factor of formation and preservation of an oligopolistic struc-

ture in industry, since they represent an incentive to concentration and a powerful obstacle to the entry of newcomers. Thus oligopoly itself appears to be a dependent rather than an independent variable — its existence being conditioned by a certain situation of technology, On the other hand oligopoly influences the types of technology in use, through the type and the direction of investments. Consciousness and cautiousness of oligopolistic entrepreneurs kill that faith in the market which is the motor of competitive development. Unlike competitive entrepreneurs, oligopolists know the overall market situation and can foresee potential losses: thence uncertainty is, as far as possible, eliminated, risks are not faced and investments are systematically directed towards safer outlets. This, far more than the difference between prices and marginal costs or price rigidity, being the main characteristic of oligopoly, we can see how a cumulative process is set in motion. The pattern of oligopolistic investment affects technology both directly and, through the evolution in the pattern of demand to which the type of technology in use is strictly associated, indirectly. As a result, technical discontinuities are increased and the factors making for oligopoly are reinforced.

These interdependent factors — oligopolistic behaviour, technology, and the pattern of demand — work dynamically in the same direction of checking an expansion of employment sufficient to absorb the excess labour force and of causing uneven growth: income is generated mainly in the advanced part of the economy, while new employment is created at a rate which hardly allows the absorption of the natural increase in the labour force.

This sort of growth is full of paradoxes. Since the redundant labour force is not absorbed, additional income accrues only to those who are already better off, while lower incomes remain low. The pattern of production adjusts itself to the pattern of demand of that part of the economy where incomes are rising, while the pattern of demand itself is influenced from the supply side. Potential demand of the rest of the economy remains only potential because it is not sustained by an adequate income, while the latter could only be created if production were expanded. Thus stagnating industries are those producing commodities which could be sold in far larger quantities if only income could increase in the backward sector, but for which no additional demand can be expected from an increase in income in the advanced sector. Growing industries are

those producing commodities demanded at income levels much higher than that prevailing in the economy: the expansion of the latter allows an increase in employment which, being offset by technological unemployment created in other branches of production, cannot absorb the labour force structurally in excess.

Thus the backward sector remains stagnating, with high unemployment and low productivity, without getting any benefit from growth taking place in the economy. At the same time the advanced sector more and more acquires the characteristics of a fully advanced economy: productivity and output rising and profits and wages rising with them; reabsorption of technological unemployment created inside the sector; a pattern of demand typical of relatively high income levels, with the introduction of new commodities. "Plenty in the midst of poverty", we could say paraphrasing Keynes (57).

3) The Historical Side of the Problem

The conclusion that technology plays a major role in generating dualism can provide a historical justification for our explanatory hypothesis. The argument is not liable to be dealt with in short: here we shall give only a few hints of what should be a joint study in economic history and economic analysis.

In our exposition we have compared the competitive case and the oligopoly case *in vacuo*, as if the structure of industry were not related to other conditioning data and as if, the conditioning data being the same, oligopoly or competition alike might prevail. This procedure, even though very useful for purely analytical purposes, can hardly be justified on the grounds of realism and of historical evidence. In actual facts, whether oligopoly or competition prevails in the industrial sector of an economy at an early stage of development is not a chance, but depends on the conditions of technology, which in turn depend on the timing and degree of development

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(57) In the context of this analysis, the optimism of Colin Clark, who has written, examining the Italian development, that Italians "may reassure themselves that the improvement of productivity, which is the only real remedy for these ills (*i.e.* poverty and unemployment), is now proceeding at the greatest possible rate", seems out of place: for, as the very case of Italian development shows, the improvement in productivity may be associated with both poverty and unemployment. Cf. C. Clark, "The Development of Italian Economy", *cit.*, p. 128.

of the economy itself relatively to other economies: and this can explain why it is not a chance that in some countries growth has proceeded fairly regularly and evenly, while in others has taken a dual path.

There has been a distinct evolution of the technical conditions in relation to the pattern of commodities produced. The capital content of a commodity, the range of techniques available and the variability of technical coefficients in its production are related to the " age " of the commodity itself, i.e. to how far back in the past the commodity was first produced and sold in the market. Some commodities which are produced at low income levels and primitive stages of development are still produced when the economy, growing, reaches more advanced stages, with the only difference that, parallel to growth, techniques are improved and become more mechanized. The range of techniques which could be used for producing such commodities is, in principle, very broad — from those used at earlier and more primitive stages to those introduced later. On the contrary, the only techniques devised for producing " new " commodities, introduced at an advanced stage of development, correspond to the general economic conditions and to the general state of technical knowledge prevailing at that stage: in advanced economies new production methods and production methods for new commodities are correspondingly advanced, and are planned having regard to the availability of factors in these economies. Production methods suitable to or possible for less advanced societies are not even envisaged. Thus there is a general evolution of production methods towards a greater capital intensity; as for commodities, the more recent they are, the greater their capital content, the more restricted the range of available techniques and the less variable the technical coefficients.

In the world's economic history there has been a group of countries which were the first to experience capitalistic economic development and which have been the first to reach economic maturity. Such countries, having been the leaders in the process of growth (58) and, so to speak, the makers of technical progress,

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(58) Also in these countries, at early stages of capitalistic growth, " the very limitation of the standard of life of the masses, which was a condition of the growth of capital accumulation, set fairly narrow bounds to the market of anything but luxury goods ", and " investment in new industries or the extension of existing industries was evidently hampered by

have not missed a single step in the technical evolution: technical progress was gradual, and they have experienced any phase of it, passing through the whole range of more primitive commodities and techniques, before arriving at the pattern of commodities and methods of production prevailing in present days. Along with technical progress, also the transformation in the structure of industry has been gradual in such economies: oligopolistic concentration was not the rule in the first stages of the industrial revolution; rather, competition prevailed, taking mainly a dynamic form of Schumpeterian type, under the stimulus of a very rapid rythm of innovations. Only later on most industries became definitely oligopolistic, when the first phase of growth — that in which the capitalistic modes of production and capitalistic employment spread throughout the whole economy — had already been accomplished: and the passage from competition to oligopoly was associated with the introduction of new methods of production of increasing capital intensity and with an increasing minimum scale of production (59).

In other countries, where growth has started later, often much later, there is no such gradual evolution. There is no need for such countries to go through the whole process of evolution in technologies, commodities and industrial organization, when the latest discoveries of more advanced countries are at their disposal. Newly introduced industries adopt modern and higly capital intensive methods of production, and demand " jumps " to some of the more advanced commodities produced in more developed countries, at a still very early stage of development of the system, when the first phase of growth is far from being completed. This might seem, and sometimes is (60), an advantage; but there can be drawbacks, not so

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the prevailing notion that the market for commodities was limited " (M. Dobb, *Studies in the Development of Capitalism*, London, 1946, pp. 196 and 198). But international trade gave soon the necessary push, opening immense markets abroad and acting, as Sir Dennis Robertson put it (quoted by R. Nurkse, *op. cit.*, p. 23) as " an engine of growth ": thus " that mood of optimism " was stimulated, " which was so essential an ingredient of the pioneering activities of the industrial revolution " (Dobb, *ibid.*), and which instead is lacking in the case examined here.

(59) On the characteristics of competition in the industrial revolution and on the process of concentration in advanced economies, see W. Fellner, *Competition Among the Few*, New York, 1949, pp. 18-24, and P. Sylos Labini, *op. cit.*, Introduction.

(60) It has been an advantage, for instance, in the case of the reconstruction of the German industries after both the world wars. But the conditions and the potential of post-war Germany, both after 1919 and after 1945, were very different from those of an under-developed or half-developed country.

evident, but often so important as to more than offset the advantages. The technologies and the commodities introduced at an early stage of industrialization are not devised in relation to the degree of development of the economies in question, but are imported from far more developed countries; and with them the form of industrial organization prevails which is more appropriate. What is good for the health of an adult is sometimes harmful for the growth of a child (61). For younger economies internal markets are limited and external markets are dominated by more advanced countries. Competition is lacking or soon comes to an end, since it is hardly compatible with the pattern of technology adopted and with the limitation of the markets, and, unless there are natural resources which give a decisive push to development, also lacking are the other incentives insuring a continuous growth of the system. Thus such economies relapse in the situation which we have tried to sketch in this paper.

LUIGI SPAVENTA

Rome

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(61) As it has been rightly said, while the effects of monopolistic factors are "less adverse where economic growth is rapid, since the process of industrial and product substitution is infinitely more effective and brings into play strong competitive factors", "in a market which grows only slowly, the competitive process is stifled... Monopolistic factors... are certainly not worse in Italy than in most industrial countries. They operate more oppressively simply because the national economy offers little scope for rapid growth, and because oligopoly, wherever it exists, does not lead to active and intense competition among semi-monopolists, but to cartel agreements, and limitation of output". (B. FOA, "The Italian Economy etc.", *cit.*, pp. 250-251). On the monopolistic elements at the beginning of Italian industrialization, see A. GERSCHENKRON, "Notes on the Rate of Industrial Growth in Italy", *cit.*, p. 366.

Sicily, which in recent years has undergone a very rapid industrial development, provides a most typical example of dualism in growth. A careful analysis of such development (P. SYLOS LABINI, "Riflessioni sul problema dello sviluppo industriale in Sicilia", *Il Ponte*, 1959) shows that, if on the average the standard of living has risen, and if the number of those who are relatively well off has increased, the number of the poor has increased even more. Unemployment has increased, owing to the elimination of primitive firms, which has not been counterweighed by a sufficient expansion of capitalistic industries. Competition has been lacking, owing to the high capital requirements of capitalistic firms and to the level of effective demand, too low relatively to the minimum quantum necessary to start production on a large scale with modern methods. Meanwhile there has been an exaggerate expansion of the tertiary sector, which has become the refuge of the unemployed labourers and entrepreneurs. As can be seen, there are striking similarities between some points of our hypothesis and a real case.

BANCA NAZIONALE DEL LAVORO

HEAD OFFICE: ROME

VIA VITTORIO VENETO, 119

Condensed Statement of Condition, September 30, 1959

ASSETS	(Million lire)	LIABILITIES	
Cash, Balances with Bank of Italy & Money at call	200,993.6	Capital	20,000.0
Treasury Bills	194,067.0	Ordinary Reserve Fund	10,000.0
Govt. or Govt.-guaranteed Securities	88,027.5	Staff Retirement Fund & Provident Fund	21,858.7
Other Securities	16,408.3	Deposit & Current Accounts	738,952.5
Bills discounted	235,937.8	Correspondents	119,091.1
Advances and Loans	283,138.2	Foreign currency accounts	54,847.8
Contangoes	15,667.8	Current accounts with Annexed Sections	9,980.9
Due from Correspondents	41,710.3	Circular cheques (*assegni circolari*)	22,300.0
Current accounts with Annexed Sections	6,303.0	Advances taken	66.9
Customers' liabilities for guarantees, Acceptances, etc.	126,595.9	Bills for collection	35,543.0
Miscellaneous accounts	7,065.6	Guarantees, Acceptances, etc.	126,595.9
Due from capital subscribers	13,557.7	Miscellaneous accounts	63,576.3
Participations	—	Unearned discount, etc.	5,792.6
Premises, Furniture and Equipment	—	Profit as per attached account	867.0
Total	1,229,472.7	*Total*	1,229,472.7
Securities deposited by third parties	357,321.4	Depositors of securities	357,321.4
Staff Retirement Fund & Provident Fund: Bank's securities deposited as guarentee	22,485.4	Bank's securities guaranteeing Staff Retirement Fund & Provident Fund	22,485.4
	1,609,279.5		1,609,279.5

AUTONOMOUS SECTIONS FOR SPECIAL CREDITS

SECTION FOR CREDIT TO MEDIUM AND MINOR INDUSTRIES

Capital, Reserves and Government Guarantee Fund L. 3,486,361,063

SECTION FOR HOTEL AND TOURIST CREDIT

Aggregate Capital and Reserves L. 4,785,365,497

SECTION FOR CO-OPERATIVE CREDIT

Capital and Reserves L. 2,838,739,353 - Government Guarantee L. 2,000,000,000

SECTION FOR MORTGAGE CREDIT

Aggregate Capital and Reserves L. 4,179,884,157

SECTION FOR CINEMA CREDIT

Aggregate Capital and Reserves L. 1,834,326,033

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CHIETI
CHIOGGIA
CIVITANOVA MARCHE
CIVITAVECCHIA
COMO
CORIGLIANO CALABRO
CORTEOLONA
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CREMONA
CROTONE
CUNEO
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LATINA CENTRO
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PESARO
PESCARA
PIACENZA
PORTO RECANATI
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REGGIO EMILIA
RICCIONE MARINA
RIMINI
ROMA
ROSARNO
SALERNO
SAN BENEDETTO DEL TRONTO
SASSARI
SAVONA
SCHIO
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